# Proceedings of "European/national initiatives to foster competency-based teaching and learning" European Conference 2014

TRANSIt


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Michalis Antonopoulos

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# PREFACE

In the context of the Agenda for New Skills and Jobs[1], recent forecasts of future skills' needs anticipate an increase in jobs requiring high- or medium-level qualifications. However, such qualifications need to be accompanied by key competences[2] that equip young people to work in intercultural, multilingual and rapidly changing circumstances and to contribute to creativity and innovation. The concept of key competences originated with the adoption of the Lisbon Strategy in 2000 and it resulted in the European Reference Framework[3]. Key competences in the EU framework are those that 'all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment'. The development of key competences should include both subject-based and transversal competences that will motivate and equip students for further learning. The key competence acquisition (KCA) by every young person is one of the long term objectives of the updated strategic framework for European cooperation. Most of the EU Member States are formulating and at least beginning to implement policies that move their school systems from being predominantly input led and subject-oriented towards curricula which include competences, cross-curricular activities, active and individual learning, as well as a focus on learning outcomes.

Yet, these developments do not necessarily result in significant, widespread changes in practice – that is, in how schools actually organise and provide learning experiences for pupils. The difficulty is in all cases translating these policies into practice. The challenge of supporting such initiatives, harnessing that innovation and bridging the gap between policy and practice on a wide scale is an issue[5]. One of the core problems for the effective implementation of the above policies is the lack of initial education and training, as well as systematic support of teachers that could equip them with the skills and competences necessary to deliver KCA effectively. In fact the situation is even worse for teachers at secondary education since their training has not prepared them for the most part for holistic methods and cross-curricular teaching, although primary teachers may have more expertise in multidisciplinary approaches . Moreover, we have to keep in mind that teachers need support in their everyday practice (training, institutional support, specific examples/good practice) and that they prob-

[1] COM/2010/0682 final. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. An Agenda for new skills and jobs: A European contribution towards full employment: http://ec.europa.eu/social/BlobServlet?docId=6328&langId=en.

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[3] Key competences for Lifelong Learning - European Reference Framework: http://ec.europa.eu/dgs/education_culture/publ/pdf/ll-learning/keycomp_en.pdf

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ably face difficulties in translating the policy into practice, especially when they don't have the proper underpinnings. New policies and practices must be therefore researched, developed and implemented to meet changing EU needs. The TRANSIt approach is in accordance with the above mentioned European Union and national policies and aims at pointing out the significance of their implementation firstly in partner countries and in a second level Europe wide. The proposed approach aims to support teachers at bridging the gap between policy and practice on a wide scale. With this project we intend to contribute to the enhancement of transversal key competences by school students through building teachers capacity for competence oriented education. The TRANSIt project will try to provide a pilot teachers training methodology on the didactics and e-assessment of key transversal competences, which could be adopted by interested stakeholders promoting educational change. In parallel, the use of online content and the relevant innovative teaching techniques are reshaping the modern school.

The "European/national initiatives to foster competency-based teaching and learning" Conference aims at building the necessary structures and networks that will facilitate competence development (of students and teachers) embracing e-learning by the teaching community. This event series aims to raise teachers' awareness of key competences, and teachers' professional skills regarding the didactics and e-assessment of the key competences with the use of authentic means, supporting them to bring European and national policies into practice.

*The Editor*

# Table of Contents

1

# eTwinning: development of teachers and students competences

**Angelopoulos Panagiotis[1], Pateraki Irene[2]**
[1] Information Society Office, NSS eTwinning, MoE
angelopoulos@minedu.gov.gr
[2] National Support Service eTwinning, MoE,
epateraki@minedu.gov.gr

**Abstract:** The eTwinning action promotes school collaboration in Europe through the use of Information and Communication Technologies (ICT) by providing support, tools and services for schools. Launched in 2005 as the main action of the European Commission's eLearning Programme, eTwinning has been firmly integrated in Erasmus+, the European programme for Education, Training, Youth and Sport, since 2014.

**Keywords:** *eTwinning, Erasmus+, school collaboration, ICT, competence*

**eTwinning action**

eTwinning offers a platform for staff (teachers, head teachers, librarians, etc.), working in a school in one of the European countries involved, to communicate, collaborate, develop projects, share and, in short, feel and be part of the most exciting learning community in Europe.

eTwinning has over 259.000 registered teachers from 124.500 European schools, who have run 34.000 collaborative projects. Since last year, Moldova, Tunisia, Azerbaijan, Ukraine, Armenia and Georgia are partner countries in eTwinning while Albania and Serbia will join soon. eTwinning is a very successful programme in Greece as it has over 10.000 registered teachers in 6.000 schools, who have run 5.600 projects. Greek teachers are very active in all activities organized by eTwinning and many Greek teachers have been awarded in the European eTwinning Prizes.

**1. eTwinning projects and New Technologies**

In eTwinning teachers create their personal account that offers them access in their eTwinning Desktop. They can personalize their profile and come in touch with colleagues that are looking for partners. Through thematic forums and a search engine they can look for partners, propose their own ideas and projects and create new partnerships. Once they find a partner, they register their project and after the approval from the National Support Services of the two partner countries, they have access to their own communication space, TwinSpace.TwinSpace is a safe place for pupils and teachers and offers many collaborative tools and many communication opportunities among teachers and their students. Since September 2014, TwinSpace changes in order to be more user-friendly, with new communication tools and new template that facilitates the collaboration among teachers and their pupils.

**2. Professional Development opportunities in eTwinning**

eTwinning, apart from projects, offers many opportunities of free teachers' professional development. Teachers can take part in Learning Events, online asynchronous courses of 8-14 days organized by the Central Support Service in

collaboration with experts on different fields like: Web 2.0 tools, creative drama, creative writing, podcasting, use of iPads etc. Teachers take part in discussions and work on different activities in order to receive a certificate of participation.
Furthermore, teachers can take part or create their own Teacher Room, a place that offers a forum and a chat. In these rooms, they can exchange ideas, share information and discuss different topics.

Another opportunity of professional development is Groups. Groups are more organized platforms with more tools than the Teacher Rooms and they are led by a moderator. In Groups, teachers can take part in discussions, exchange material from their work in eTwinning and offer support to each other. One of the most successful Groups is Creative Classroom that organizes many activities with main objective the professional development of its members. Such activities are the expert talks, webinars with experts on different fields, online conferences, campaigns, competitions, an online library with members' material etc. From January 2015, Groups will be part of the main eTwinning platform and will be more user-friendly for the members and the moderator.

Moreover, eTwinning offers face-to-face opportunities for professional development with the organization of five (5) Professional Development Workshops (PDW) every year in different European countries. They are aimed at individuals who want to learn more about eTwinning and develop their skills in European collaboration using Information and Communication Technologies (ICT). Also, the National Support Services organize, throughout the year, contact seminars to bring in contact teachers from different countries with in order to register new eTwinning projects.

In national level, the Greek National Support Service organizes, every year, online asynchronous courses in the Moodle platform for the Greek teachers on a range of topics. This year, five online courses on the topic of collaborative activities in eTwinning have been organized combining synchronous and asynchronous training. Meanwhile, 15 ambassadors, experienced teachers who have been appointed as ambassadors, organize face to face workshops and webinars throughout the year, in order to better inform the registered teacher and attract new ones.

**3. Recognition and evaluation of eTwinning projects**

The teachers who run eTwinning projects can apply their project for evaluation and be awarded with the National Quality Label that offers them the opportunity to take part in the National Awards competition. If at least two partners have already received the National Quality Label and the project has been proposed for the European Quality Label by at least one National Support Service, then the project can be awarded the European Quality Label and be eligible for the European Prizes competition. The project is evaluated on the six criteria required .A project has to broadly achieve excellence in the following areas:

- Pedagogical Innovation
- Curricular Integration
- Communication and exchange between partner schools
- Collaboration between partner schools
- Use of technology
- Results, impact and documentation

The National Support Service applies 5 specific minimum requirements in granting the Quality Label to a project. All 5 requirements must be met:

- The project must have common goals and a shared plan.
- It must be finished, or in its last stages.
- The applying teacher must have made a significant contribution to the project.
- A certain degree of collaboration must appear.
- Project results must be visible.

**4. eTwinning: innovative teaching and creative learning**

eTwinning offers many opportunities for innovative teaching and learning through the offered tools. Teachers but mainly students, who are involved, benefit from the collaboration they achieve with schools in other countries while learning becomes meaningful and interactive.
The five main value-added areas of teaching and learning practices through eTwinning projects are the following (Galvin et al, 2006):

- Authentic learning: students are more motivated when

they participate in authentic and meaningful learning activities.
- Collaboration: eTwinning projects require collaboration in many levels such as teacher-teacher, student-student and / or teacher-student.
- European dimension: eTwinning projects point out the European dimension and intercultural education by bringing students and teachers from different countries together and by fostering mutual understanding.
- Use of New Technologies: eTwinning promotes the use of New Technologies in schools, enabling students and teachers to develop their technological skills in an authentic situation.
- Teacher training and professional development: an important part of eTwinning is its contribution to the professional development of teachers involved.

Many studies have supported the effectiveness of eTwinning in providing authentic learning opportunities through programmes and developing the skills of the 21st century (European Commission, 2013; Crawley et al., 2010a). Teachers and students are not limited to the tools offered by the platform but demonstrate skills by using other tools like digital videos, LMS like Moodle, blogs and wikis (Kampylis at al., 2013).

**5. Development of teachers competences through eTwinning**

Competences are a complex combination of knowledge, skills and attitudes leading to an effective action in the real world. At national level, there is a great variety of approaches to definition and implementation of Teacher Competence Framework but at European level a comprehensive general framework does not exist. Only:
- frameworks for specific subject areas (e.g. UNESCO's ICT Competency Framework for Teachers; European Profile of Language Teacher Education)
- three broad areas of competence were defined in 2005 in the policy document: Common European Principles for Teacher Competences & Qualifications (European Commission, 2005)
- International literature review on teachers' competences, standards and development: Teachers' Core Competences: requirements and development (European Commission Thematic Working Group on Professional Development of Teachers, 2011)

There are three broad areas of competence for teachers (European Commission, 2005):
1. Work with others: work effectively with learners and collaborate with colleagues
2. Work with and in society: effectively work with local community and education stakeholders (e.g. parents, teacher education institutions, cultural organizations, businesses etc), prepare learners to be responsible citizens of the world
3. Work with Knowledge, Technology & Information: Good subject knowledge & pedagogical knowledge as well as ability to integrate technology effectively to enhance teaching & learning and ability to access, analyse, validate, reflect on, transmit, and build on information effectively.

In eTwinning, there is an interest lately to see how competences can be developed through the collaboration and work on international projects. In theory, all the above areas are covered in eTwinning projects as both teachers and students work with others and with the society and work with knowledge, technology and Information.

This year, an eTwinning campaign was run to identify what the teachers think, by asking them to create a poster where they explain how eTwinning has improved their competences. This campaign started with a webinar by Caroline Kearney, Coordinator of KeyCoNet Project - European Policy Network on Key Competences in School Education to explain what competence is and to identify the key competences. In November, a Monitoring eTwinning Maturity Model activity will be run by the Central Support Service for the next six months. This activity is attempting to better understand the impact of eTwinning projects on teachers' practice. It is designed to assist teachers to self-assess their practice in eTwinning in relation to 4 competences (pedagogical competence, collaborative competence, digital competence, and project-based learning competence), and track change over time.

Finally, the new eTwinning book will be dedicated to pupils' competences: "Developing pupil competences through

eTwinning". It will explore the 8 Key Competences for Lifelong Learning -Communication in one's mother tongue; foreign languages; digital skills; basic skills in maths and science; learning to learn; social and civic responsibility; initiative and entrepreneurship; and cultural awareness and creativity- and how they can be addressed at school through the eTwinning projects. Each key competence will be analysed within a different chapter from a practical point of view - pedagogical experts explore how students worked and acquired different skills by participating in eTwinning, using as an example some of the most successful eTwinning projects.

In eTwinning, it is clear now that competence-based education is needed and further activities will be developed on that direction in central and national level.

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2

# School Teachers' and Leaders' Digital Competences: Supporting Transformative Innovations for 21st Century School Education

**Demetrios G Sampson**
Department of Digital Systems, University of Piraeus, Greece
sampson@unipi.gr

Digital Technologies are an enabler for incremental or disruptive transformations to the way that individuals, groups and organizations "learn" and the way to "assess" learning in 21st Century. To this end, millions of Euros and/or US dollars have been spent all over the world for purchasing and installing technologies in schools (large investments in infrastructure), where as limited investments have been planned and implemented in systematically developing and assessing the essential digital competences for school teachers and leaders – (that is, limited investments in human resource). This has led to limited educational added-value and transformative impact at school education. Although in principle the systematic development and assessment of appropriate educationally meaningful digital competences for both school teachers and leaders are recognized as a major element for the up-take of technology-supported and technology-enabled school innovations at large scale, still, both Initial and Continuing School Teachers and Leaders Education is predominately traditional and uninspiring both in terms of scope, methods and assessment. And yet, it is assumed that all teachers are able to design and implement technology-supported and technology-enabled school innovations using a wide range of digital technologies for teaching and assessing their students within the national curricula with limited additional professional development. Even more, it is also assumed that all schools share more or less the same level of educationally relevant digital competences (commonly referred as "e-maturity") at organizational level to adopt technology-supported educational innovation, just because they have installed the same technological infrastructure.

Within this context, the thesis of my presentation was that: globally, large-scale national initiatives are being implemented towards promoting the level and quality of Information and Communication Technologies (ICT) use in school education. However, despite these efforts, the current level of ICT uptake from schools remains low. A wide range of factors have been identified as barriers, including lack of teachers' ICT Competences and lack of ICT infrastructure. Typically, these barriers are tackled separately without taking into consideration the ecosystemic nature of schools as organizations. Thus, I proposed that a holistic approach on School ICT Competence based on combining both individual Teachers' and School Leaders' ICT Competences and School's eMaturity is needed to tackle them.

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3

# Key Competence Acquisition and Competence Based Learning: The Greek experience compared to other EU countries

**Giorgos Asimakopoulos**[1, 2]
**Michael Paraskevas**[1, 2]
[1]Computer Technology Institute and Press, "Diophantus", Patras, Greece
[2]Computer and Informatics Engineering Dept., Technological Educational Institute of Western Greece, Antirrio, Greece,
mparask@teimes.gr, asim@teimes.gr

**Abstract:** As defined by EU strategy, Key Competence Acquisition (KCA) is a cornerstone for every student's future development and should be acquired during school attendance in any state member. Each EU member is at some stage of policy implementation, regarding the transition towards curricula that engage students with KCA. Despite both EU set policy ant national initiatives, major differentiations are observed among EU member states. During the implementation of TRANSIt, which is a EU funded project that contributes to the acquisition of key competences of students, a survey was conducted among teachers from six EU states regarding the current state of KCA in each partner country. This paper presents differentiations occurring between Greece and the other countries.

**Keywords:** *Competences, assessment of competences, Open Badges*

## 1. Context

### 1.1 TRANSIt aims and objectives

As set by EU strategy documents 1, Key Competence Acquisition since 2009 is regarded as a cornerstone for every student's future development. KCA should be acquired during school attendance in any member state. As stated by the EU, Key Competencies are those that 'all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment' and are defined as communication in the mother tongue, communication in foreign languages and mathematical competence and basic competences in science and technology. Along with these three Key Competencies there are five more that are considered as transversal: digital competence, learning to learn, social and civic competences, sense of initiative and entrepreneurship and finally, cultural awareness and expression. Although KCA is defined as an EU policy, there are different levels of policy fulfilment and diverse approaches in member states 2.

TRANSIt aims at developing students' competencies by enhancing teachers' capacity. For this reason a modular teachers training methodology was formed, regarding the didactics and assessment of key transversal competences with the use of ePortfolios. The learning process is structured as a competency development programme that initiates just after registration and continues until the final assessment, which is realized through the delivery of an award system based on Open Badges [2]. The badge earned is in recognition of the work the trainee has done and is displayable on a blog, a personal website or a curriculum vitae [4].

### 1.2 Educational systems and policies [4]

In Greece a legislative change took place in order for a Competence Based Learning (CBL) approach to be introduced 6. This introduction is performed by different pilot curricula for competence driven education, based on the National Life Long Learning Strategies 7. Despite this, Greece has no national policy concerning the acquisition of key competences.

The Netherlands has no national policy concerning the acquisition of key competences. Key competencies are interwoven in the current general education.

Key competences from the European Framework are referred as key skills in Ireland. These key skills are central to teaching and learning across the curriculum at all levels. Basic competences are defined that have strong similarities with those set in the European Reference Framework: linguistic communication, mathematic competence, competence in knowledge and interaction with the physical world, digital and information processing competence, social and citizenship competence, culture and artistic competence, learning to learn, and personal autonomy and initiative.

In France a framework for developing the curriculum for primary and lower secondary education is defined by the Common Core of Knowledge and Skills. The competences they identified are: command of the French language, proficiency in a modern foreign language, the key elements of mathematics, scientific culture and technology, mastery of ordinary information and communication skills, humanist culture, social and civic skills and autonomy and initiative.

Austrian students gain, consolidate and continuously develop the eight key competences within an integrated and holistic process.

### 1.3 Survey Methodology

In order to identify the training needs of teachers around competency-based education in partner countries, a multilingual questionnaire survey was devised and administered online through Limesurvey to teachers of primary and secondary schools, teacher trainers/pre-school teachers, curriculum developers and school leaders in the partner countries. In particular in this study we will focus on differences between education needs of Greek teachers in relation to teachers of other participating countries.

A 5-grade Likert scale [8] [9] questionnaire was aimed at identifying the profiles of the possible participants in TRANSIt training activities, the current implementation of competence-based didactics and assessment as well as participants training needs. The link for the survey was made available through the etwinning mailing list by the National Support Service [10], CTI Diophantus [11]. The questionnaire included a short introduction and 33 questions divided into 4 sections. Both fully and partially completed questionnaires were taken into account. For the purposes of this text, sections regarding participant profile, teaching methods and level of support for CBL were taken into account. An in depth analysis of the Greek needs analysis results is done at Riviou & Sotiriou [12].

## 2 Findings [4]

### 2.1 Participant profile

The survey was conducted by 1,119 participants from five EU member states, 899 of which originated from Greece while the other 220 participants work in either France, Spain, Austria, Ireland or The Netherlands. A major differentiation based on participant sex is displayed, as almost the 52% of participants from Greece are female, opposed to a 27% mean for the other four countries. Regarding ages, Greece is underrepresented in the 55+ group by 22%, while Greek teachers are more in the 41-55 group by 18%. This may explain why Greek teachers with more than 15 years of teaching experience are less than corresponding from other EU countries by 25%.

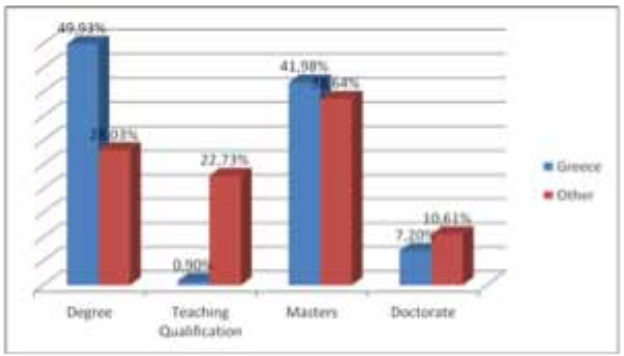


*Figure 1. Formal qualifications compared*

31% of Greek participants are primary teachers while the 47% are secondary teachers, opposed to 16% and 43% for participants from other countries. A major differentiation that may be a consequence of national educational policies occurs regarding formal qualifications, as under 1% of

Greek participants holds a teaching qualification opposed to 23% mean value for the other five countries. On the other hand, 21% more Greek participants hold a university degree when compared to teachers from other countries.

The Greek teacher appears less enthusiastic regarding ICT usage, as only a 56% define their selves as not being reluctant or sceptical, opposed to a 75% mean value for the other countries. A tie occurs when it comes to participation professional development activities on competence acquisition (42% against 46%). Despite attending such competence acquisition activities, other EU country participants display more experience in real world teaching such subjects. Other country participants present a slight advantage regarding teaching experience in fields such as digital competence, with the gap expanding when it comes to experience in teaching learning to learn (71% Greece - 89% others), social and civic competences (69% Greece - 78% others), cultural awareness and expression (69% Greece - 79% others). This gap is found to be inflated when it comes to experience in teaching initiative and entrepreneurship oriented competencies, with Greece displaying a 46% against a 72% mean value for France, Spain, The Netherlands, Ireland and Austria.

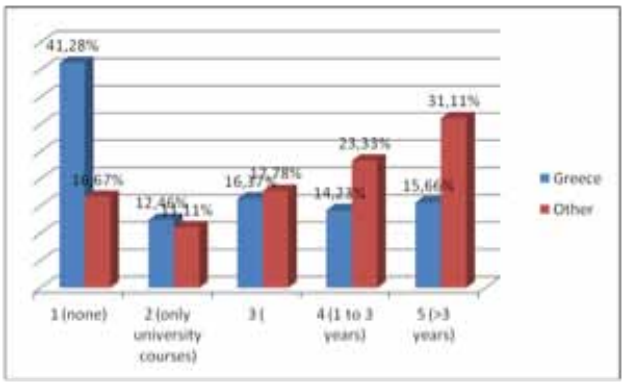


*Figure 2. Level of experience in teaching competences about entrepreneurship*

It can be concluded that Greek teachers that took part in the survey, when compared to colleagues from the other five countries, mostly are equipped with a degree rather than having any teaching qualification. Even more, despite having attended professional development activities, Greek teachers are quite negative on ICT utilization and display a lower level of experience regarding CBL teaching. Finally, participating teachers from Greece were comparatively inexperienced regarding teaching social and civic competences, cultural awareness and expression and initiative and entrepreneurship oriented competencies

### 2.2 Didactics and teaching methods

During the survey, teachers were questioned about utilization of teaching methods that are mostly practiced in competence based learning. It was found that teachers working in Greece utilize discussion and debating slightly more than their European colleagues by a 7% margin (83% against 76%).This is the case for sub-group activities too, as this method is regularly or more frequently used by the 90% of Greek teachers, against a 81% their colleagues from the other five countries display and, similarly, Greece is slightly ahead in the utilization of guided discovery (74% Greece - 71% others). This status is inverted but the same slight margins appear again when it comes to other CBL related methods with teachers from Austria, France, Spain, The Netherlands and Ireland taking a slight lead in utilizing methods such as problem based learning (70% Greece - 73% others), action learning (57% Greece - 61% others), storyline (56% Greece - 62% others), reflection on learning (64% Greece - 65% others) and reflection on collaboration (67% Greece - 71% others).

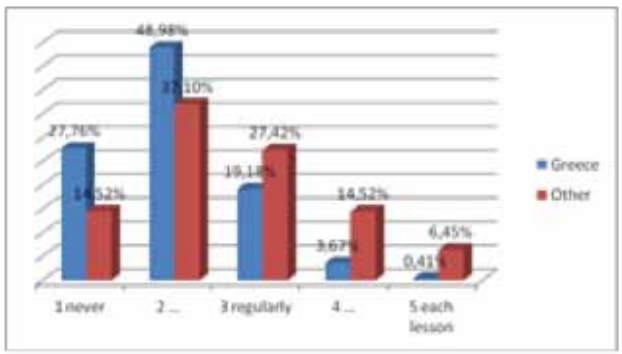


*Figure 3. Interviewing experts, peers & others*

This tie breaks when other teaching methods are examined, with Greek teachers displaying a noticeable under-utiliza-

tion of certain methods when compared to teachers from the other five countries. This is the case with interviewing experts, peers or others (23% Greece - 48% others), classroom instruction (43% Greece - 75% others), search assignments (58% Greece - 74% others) and other related methods (30% Greece - 61% others). In general it can be said that Greece follows the other partner countries in general when it comes to specific teaching methods that are considered important for CBL.

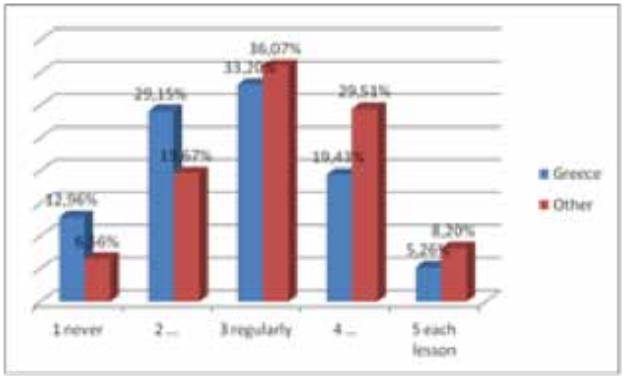


*Figure 4. Search assignments*

### 2.3 Support of Competence Based Teaching

This part of the survey dealt with the level of support supplied by schools in reference to competence based learning. Teachers were asked to assess the level of resources that are devoted to facilitating CBL in their school. This section revealed major differentiations between Greece and the other five countries. Regarding hardware infrastructure only the 56% of Greek teachers reported that it was sufficient or better, contrasting with the mean 79% that is displayed by The Netherlands, France, Spain, Austria and Ireland.

This gap only becomes larger when it comes to software infrastructure as only the 44% of Greek teachers find it sufficient or better, while their European colleagues award their provided software support with an 83%. Even when it comes to internet access which is thought of as granted, the 76% of teachers working in Greece find it sufficient or better opposed to a mean of 93% from the other countries, while a 3% Greek teachers answered that there is no internet connection provided, a figure which is null for the other countries.

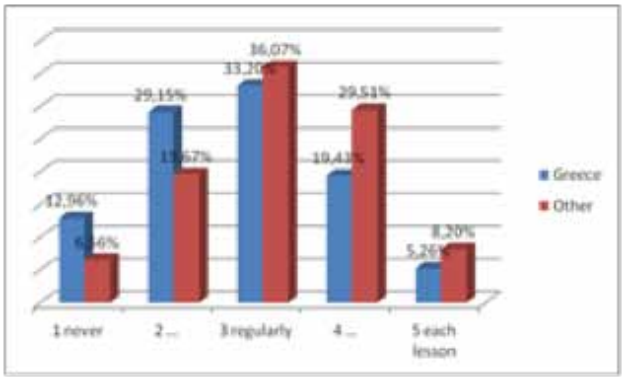


*Figure 5. Support for continuing professional development*

The same impression is formed when teachers are asked about digital learning material, with teachers from Greece awarding their available resources with a 41% when their colleagues are satisfied by provided resources by 74%. Finally, Greece presents a low level of continuing professional development as only 38% of teachers are satisfied by provided opportunities, while teachers from Spain, The Netherlands, Ireland, France and Austria describe provided continuing professional development as satisfactory by 77%.

It is more than clear, based on teachers' opinions that teachers working in Greece lack necessary resources (software, hardware, internet access and digital learning material) when compared with teachers from Ireland, Austria, France, The Netherlands and Spain. This could become a major drawback for Greece, as these resources are crucial for CBL.

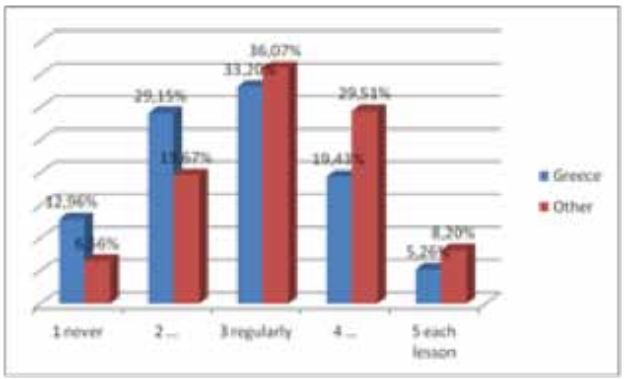


*Figure 6. Rating support: digital learning material*

## 3. Conclusion

More or less EU member states are implementing policies and procedures that transform their school structures to adopt curricula which include KCA. Although there is a common policy reform initiative in place, this transformation process however does not display uniform results in EU member states, as variations are observed regarding turning policies into practice. It was found that Greek teachers that took part in the survey, when compared to colleagues from the other five countries are -in their majority- equipped with a degree rather than having any teaching qualification. Even more, despite having attended professional development activities, Greek teachers are quite negative on ICT utilization and display a lower level of experience regarding CBL teaching. In general it can be said that Greece follows the other partner countries in general when it comes to specific teaching methods that are considered important for CBL. Based on teachers' opinions, teachers working in Greece lack necessary resources (software, hardware, internet access and digital learning material) when compared with teachers from Ireland, The Netherlands, Austria, France and Spain. This could become a major drawback for Greece, as these resources are crucial for CBL.


## Acknowledgement

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4

# Open Badges and Key Competencies

**Serge Ravet**
ADPIOS, Badge Europe, Europortfolio
serge.ravet@iosf.org

**Abstract:** This position paper is a reflection based on the work done in the TRANSIt project in relation to the acquisition of key competencies. It explores why and how Open Badges could facilitate this acquisition and, conversely, how what we have learned from key competencies could feedback into the development of Open Badges practice.

**Keywords:** *Open Badges, Key Competencies, standards*

## Introduction

TRANSIt (http://www.transit-project.eu/) is a European project aiming at providing secondary school teachers with Open Educational Resources (OER) to support their learners in the acquisition of key competencies. The first idea, when introducing Open Badges in TRANSIt, was to recognise the competencies developed by the teachers after the completion of a series of training modules. Later on, a second idea emerged: the use of Open Badges as a means to develop learners' key competencies and recognise their acquisition. It is from this second idea that this position paper is drawn.

## About Open Badges

In September 2011, the Mozilla foundation launched the Open Badge Infrastructure project, a programme to make it easy to issue and share across the web digital badges recognising one's skills and achievements. Born from the need to recognise informal learning and provide a trustworthy means to show skills and achievements online, this initiative has now spread to the world of formal learning as well as to the world of work.

Open Badges are simple digital objects made of a picture in which a set of metadata have been «baked.» The main metadata contained in an Open Badge provides information on:

- Who is the **issuer**? — teacher, learner, employer, organisation, etc. issuing the badge;
- Who is the **earner** — learner, school, teacher, employer, organisation, etc. receiving the badge;
- What are the **criteria** — the conditions for receiving the badge, what the receiver has done or can do (or aim at);
- What is the **evidence** — the artefacts demonstrating that the awarding criteria are fully satisfied.

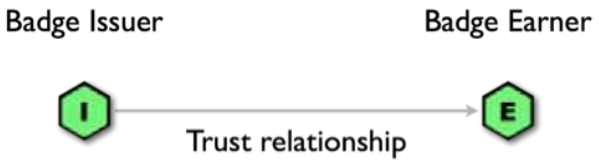
Open Badges are issued in a wide variety of contexts to recognise:

- The acquisition of a competency;
- The achievement of a goal (personal or collective);
- The participation in an event (lecture, conference, trade fair, etc.);
- The visit to a place (museum, website, etc.); and more!

Badges can also be issued to set targets (aspirational badges) or to state personal values (using self-issued badges). Understanding the wide variety of badge types is important when exploring the use of Open Badges in the context of key competency development and recognition: Key Competency Badges might not be the only option!

One of the key features of Open Badges is the ability to verify whether the badge holder has really earned that badge. Within the Open Badge Infrastructure (OBI) is not possible to

claim a badge issued to someone else. So, while the claims usually made in a résumé can only be verified manually (call a previous employer, check that the diploma is not a fake), Open Badges can be verified online. The reader of an Open Badge can trust its content. An Open Badge can be visualised as the representation of a trust relationship, a criterion- and evidence- based trust relationship:




**Trust relationship:** I (the issuer) trust you (the earner) to do this (criteria) based on this (evidence)
When distributed over a network, Open Badges create a Network of Trust. It will even be a peer-to-peer trust network when everyone is able to issue and receive trust (Badges)[6].

**Open Badges for or with the learners**
One of the key questions regarding Open Badges is: who is the main beneficiary? Is it the institution or the teachers as it facilitates the tracking of learners' progress? Is it the future employer as it facilitates the selection and verification of claims made in résumés? Is it the learner who feels empowered?

One way to answer this question is to ask: who is the main designer of an Open Badge? Is it an external body, like a ministry of education or a professional body? Is it the institution or the teacher? Is it the learner? Or can we imagine a combination of different Open Badges, some designed by external bodies, others by teachers and some by learners?

**About Key Competencies**
Following the 2006 Recommendation of the European Parliament and the Council of Europe on key competences[7] for lifelong learning, an annex was added in 2008: Key Competences for Lifelong learning European Reference Framework [1], a document eliciting 8 Key Competencies:

- Communication in the mother tongue;
- Communication in foreign languages;
- Mathematical competence and basic competences in science and technology;
- Digital competence;
- Learning to learn;
- Social and civic competences;
- Sense of initiative and entrepreneurship;
- Cultural awareness and expression;

The aim of the framework, as stated in this document, is to:

- identify and define the key competences necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society;
- support Member States' work in ensuring that by the end of initial education and training young people have developed the key competences to a level that equips them for adult life and which forms a basis for further learning and working life, and that adults are able to develop and update their key competences throughout their lives;
- provide a European-level reference tool for policy-makers, education providers, employers, and learners themselves to facilitate national- and European-level efforts towards commonly agreed objectives;
- provide a framework for further action at Community level both within the Education and Training 2010 work programme and within the Community Education and Training Programmes.

The document from the European Commission does not pro-

[6] Currently, one's need to use different pieces of software to issue, collect and display Open Badges. In the near future, everybody will be able to be a badge issuer, earner and consumer (the people who read the badges).
[7] Competency vs competence: for the International Labour Organisation (ILO), competence refers to ranges and levels of responsibility, like in «the domain of competence of this ministry is 'social affairs,'» while competency refers to a combination of skills, knowledge, attitudes and values (SKAV). It is unfortunate that a number of publications from the European Commission, including the Key Competence Framework, are not only confusing regarding the use of competence/competency but also skills and competencies. CIPD, the UK HR professional body (the largest Europe), also refers to 'competency' not 'competence' http://www.cipd.co.uk/hr-resources/factsheets/competence-competency-frameworks.aspx

vide any indication of the criteria one should use to define whether someone has acquired any of the defined key competencies. This job was left to the member states[8].
Back in the early 2000s [Key Skills 2000, 3], i.e. before the European Commission document was published, the UK defined national standards for key skills in:

- Communication
- Application of Number
- Information Technology
- Working with Others
- Improving Own Learning and Performance
- Problem Solving

Each key skill was defined at 4 levels, each level having its own set of descriptors (c.f. extract on the right) with well-defined criteria and evidence to produce in order to get the award.

National standard such as those would make it easy to design a series of Open Badges matching the different areas and levels of competencies.
In that context Open Badges would simply provide the means to make one's learning achievements more visible (online) and verifiable (trustworthy). A priori no transformative effect is expected: Open Badges are simply a new mean to do better something that was already done before.
In the absence of a national standard, criteria would remain to be defined, and this could put a lot of pressure on teachers to do a job they have not been trained[9] for. This could result in poorly defined criteria. Moreover, if every teacher, or every school starts defining their own criteria, one obvious danger is the fragmentation into a myriad of different Open Badges addressing the same competencies.

Poorly defined and fragmented criteria might be detrimental to the readability of Open Badges, if not their credibility altogether.


Part B

YOU MUST:

Provide at least **one** example of meeting the standard for LP4.1, LP4.2 and LP4.3 (the example should include at least three targets). Overall, show you can use at least **two** different ways of learning to improve your performance.

*Evidence must show you can:*

**LP4.1**
Develop a strategy for improving your own learning and performance.

4.1.1 review your current capabilities and clearly identify what you hope to achieve in the future
4.1.2 research information on relevant learning opportunities and ways to improve your performance, to inform planning
4.1.3 set SMART targets and plan how these will be met, prioritising tasks and making a reasoned choice of methods and resources.

**LP4.2**
Monitor progress and adapt your strategy to improve your performance.

4.2.1 manage your time effectively and take responsibility for using different ways of learning to meet new demands
4.2.2 seek and actively use feedback and support from a variety of sources, to help meet your targets
4.2.3 reflect critically on your learning and adapt your strategy as necessary to improve your performance.

**LP4.3**
Evaluate your strategy and present the outcomes of your learning.

4.3.1 review the different ways you have learned and the extent to which you have met your targets
4.3.2 bring together and clearly illustrate what you have learned, organising evidence to support your purpose
4.3.3 assess the effectiveness of your strategy, including factors that affected the outcomes, and identify ways of further improving your own learning and performance.

**Improving own learning and performance: level 4**

**Key Competencies + Open Badges = ?**
How to combine Open Badges with key competencies? To what result? One way to approach this question is to recognise that key competencies are just one particular group of competencies, so what is good for the recognition of competencies in general, is likely to be just as good for key competencies. As there are already plenty of Open Badges used to recognise a large range of competencies, then it is just a matter of extending current practice.

[8] Key Competence Network on School Education (KeyCoNet, http://keyconet.eun.org/), another European project dedicated to the study key competencies has produced a number of interesting documents [2] in relation to the implementation of key competency policies in Europe.
[9] Designing good competency standards requires to perform functional analysis on a whole sector or domain taking into account all the activities, from the janitor to the top management. If not such holistic functional analysis is being performed, then it is very likely that the outcome will be a series of fragmented task analysis providing an impoverished understanding of the complexity of the real world.

What is implied with this approach is that Key Competency Open Badges will need key competency standards similar to the UK key skill 2000 introduced above. While it might seem unproblematic to define standards related to the mastery of mathematics and foreign languages, things might get more complicated with digital competencies and even more with the sense of initiative and entrepreneurship and social and civic competencies. For example, the French authorities decided to remove 'entrepreneurship' from the European key competency labelled «sense of initiative and entrepreneurship.» The French version is «autonomie et initiative» [5] (autonomy and initiative).

Here is an extract of the descriptors related to the sense of autonomy and initiative:

> Autonomy is the recognized ability of a student to establish principles and rules of conduct, choose their personal pathways **in compliance with social rules**[10] [highlighted by the author].
>
> [...]
>
> To assess students' sense of initiative, one should highlight their **actual motivation for school work**[11] [highlighted by the author].

So, the French understanding of autonomy and initiative is about compliance and dedication to school work. As students have no say in the curriculum, the organisation of the school year or even the layout of the classroom, it is normal that the standard elicits the need for compliance. At no place in this standard is there the slightest indication that institutional practices could be challenged, or even simply questioned. Challenging grades, tests, the use of multiple choice questions, exams or homework will undoubtedly be interpreted as a manifestation of a lack of motivation for school work.

The anecdote reported in the box above demonstrates that, while a school should be the place for practising democracy, critical judgement, etc. what is really sought for is compliance and subservience.

There were alternatives to disciplining the culprits (the pupil who published the video, those who created the chaos and the teacher who cannot 'hold' her classroom). While it is probably true that this particular teacher has «special needs» the incident could have been an opportunity to open a dialogue and invite the pupils to be part of a solution — after all, if teachers have to adapt to learners with «special needs», why not the other way around? It could have been a great opportunity to empower the pupils and give them a chance to create a different situation, develop some empathy with a teacher who might be great in another context. Why not invite the pupils to create that context? But this would require a different mindset...

**The Facebook incident**

Imagine a pupil publishing on Facebook a video capturing the state of total chaos of his classroom who is then disciplined by the school board for this action. The teacher, who according to her colleagues should not be allowed to teach and is well known for letting disarray take over her classroom, is not disciplined.

Whatever one thinks about the value of disciplinary action, what is clear is the lesson taught to the pupils: if something goes wrong with a person of authority, do not report it as nothing will be done to correct it; you might even get disciplined for it. Even when they are wrong, adults are always right!

Anecdote collected from an Open Badges workshop

**Do we need Key Competency Badges?**

Another way to ask the question above is: if we want to use Open Badges to support the development and recognition of Key Competencies, does it mean that the title of the badges needs to be related to any of the key competencies? For example, do we need to have a (series of) social and civic Open

[10] L'autonomie est la capacité reconnue à un élève de se fixer des principes et règles de conduite, choisir ses cheminements personnels dans le respect des règles sociales en vigueur (Livret personnel de compétences Palier 3)

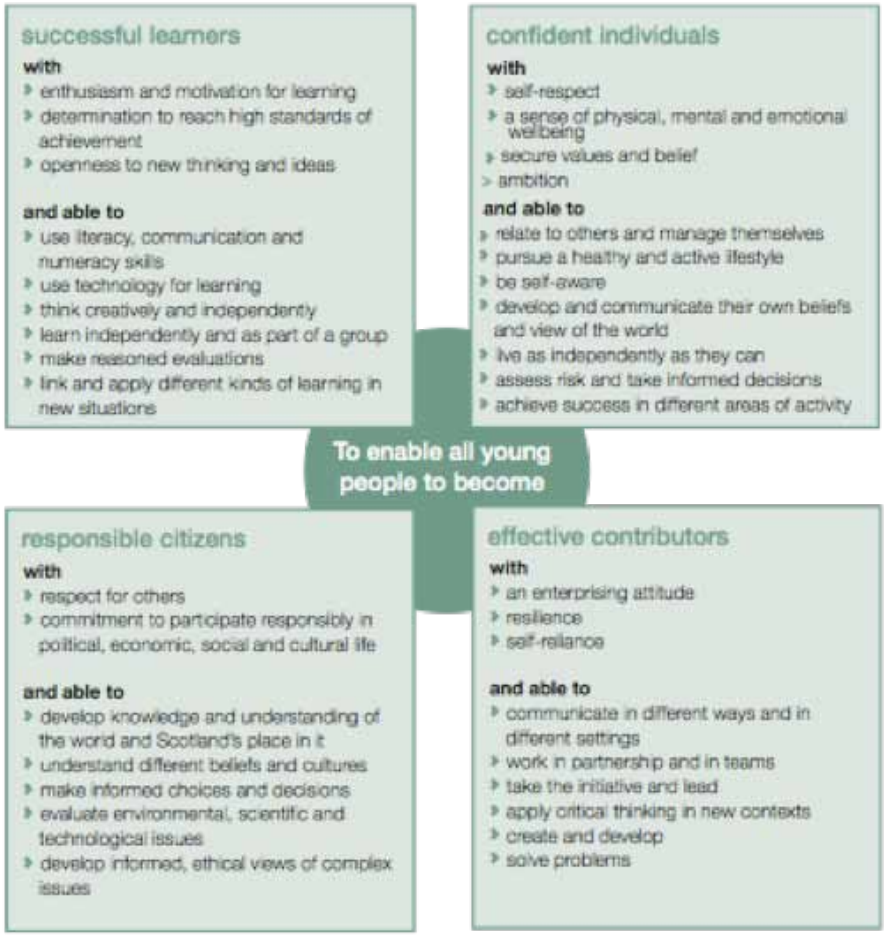
[11] Pour évaluer l'esprit d'initiative des élèves, il convient de mettre en valeur leur motivation effective pour les tâches scolaires (ibid)

Badge(s)? Or should other badges be used to support and recognise the acquisition of those competencies?
One possible issue with Key Competency Badges is the need to provide a reference to a standard, even a local one, and standards tend to be… normative. The social norm explicit in the French key competency framework is the need for compliance. While it might sound unproblematic with mathematics and science, it could clearly be problematic when addressing issues related to social and civic competencies: is the standard designed to empower learners (giving them the power to act, including to challenge the educational institution) or to enforce compliance to keep the institution safe from any internal challenge?

So, if one does not agree with an institution using Open Badges like cow people (boys and girls!) use irons to brand cattle, one should refuse to bear any mark of compliance. No conformist badge for me, please!

**Do we need standards?**

In any Open Badge, one of the metadata is relative to the criteria for its delivery. Criteria can be imposed (externally defined) or negotiated. They can also be self-defined or co-constructed.
Let's say that everybody defines his/her own criteria for social and civic competencies, then the collection/aggregation of all the criteria generates a (series of) bottom-up



standard(s). New social norms might be revealed through that process — the Netiquette, is one example of such a social norm which is the product of a community rather than imposed from an external authority.

But there is one more fundamental problem with standards, not with standards as such, but with those who think that standards are the alfa and omega of everything, letting standards be the proverbial tail wagging the dog.

Let's take the four capacities defined in the Scottish curriculum for excellence[12] [6]: «to enable each child or young person to be a successful learner, a confident individual, a responsible citizen and an effective contributor.» The first attribute listed for successful learners is enthusiasm for learning. Performing a search for 'enthousiasme' in the French key competency standard leads to a fail. The second attribute, motivation for learning, as we have seen earlier is also absent from the French standard which is solely interested in «actual motivation for school work,» not learning for the sake of learning.

The second attribute for responsible citizen, is commitment to participate responsibly in political, economic, social and cultural life. How is it possible to demonstrate the commitment to participate responsibly in political life if all what pupils have to demonstrate as stipulated in the French standards is: «The student is interested in general news, whether political, economic, cultural, scientific»,»Know the foundations of political democracy» and «List the main actors in the political and social life» [5 pp. 21 & 25 underlined by the author]. How showing interest, knowing and listing can provide even the slightest evidence of commitment to participate responsibly in the political life? That should not be a problem as the commitment to participate responsibly in political, economic, social and cultural life is not part of the French standard, which only commitment it is solely interested in is the commitment to school work. Everyone knows that there is a large gap between being interested and committed[13]: French pupils are solely required to be interested, the Scottish to be committed.

**Scottish Curriculum for Excellence**

While the definition of the Scottish Curriculum for Excellence starts from high level goals to which are related a number of values and attributes out of which normative definitions might (or not) be elicited, the French key competency standard seems solely focused on normative definitions in order to obtain the desired level of compliance, and subservience, even if compliance and subservience are in contradiction with the goals of a modern, open and democratic society. The subtext in centrally defining norms relative to autonomy and entrepreneurship is that it is not possible to trust teachers, learners and other stakeholders of the educational system to define norms that are aligned with shared values.
The Scottish Curriculum For Excellence, on the other hand, is primarily focused on values and it believes that the people who will implement the curriculum are confident individuals, responsible citizens and effective contributors. The implementation of the (meta)curriculum is the exercise during which the old standards will be confirmed, transformed or dismissed and new standards will emerge. The implementation of the curriculum is a learning exercise, an exercise that never ends.

**Alternatives for Key Competency Open Badges**

While an agreement on standards for the delivery of Open Badges for Communication in the mother tongue should not be a problem, an agreement on digital competency, social and civic competency, sense of initiative and entrepreneurship and cultural awareness and expression might be.
While normative badges should not be excluded (it is probably better if there is a norm defining what is a competent doctor — and that this norm includes the demonstration of continuing professional development!), normative badges could also weaken the ability to innovate, be creative and take risks: «if all I have to do to get this badge is described here, why bother doing more?» Of course, there are domains where creativity is limited or not welcome (rare are the accountants that would claim a creative accounting badge, un-

[12] It is in face meta-curriculum as the goal is to have it defined with all the stakeholders at local and regional levels, not imposed from a central authority.
[13] Think of an English breakfast: the chicken is interested, the pork is committed.

less looking for a job in a rogue business!)
The main risk with normative badges is to enforce compliance — which is not seen as a risk in a society where compliance and subservience are expected. For example, the pupil at the origin of The Facebook Incident, instead of being disciplined could have been awarded a Whistleblower badge. Had he had a chance to work with his classmates and his teacher with special needs towards a solution for working together, they could have decided to create a special badge celebrating a remarkable achievement.

**The power of Achievement Badges**

Achievement Badges are badges delivered after having achieved something. For example the pupils who have organised an exhibition, or run a science project, receive a badge to celebrate their achievement. The badge does not say anything about the competencies involved (each contributor might have brought in a different set of competencies), it simply states: here is what we have achieved together!
Achievements badges, contrary to key competency badges, do not have to be not normative. Created along the learning pathway, they can be designed with the learners rather than for them. As they can be created post-facto, they do not bear the stigma associated with the use of Open Badges as extrinsic motivators which, as established through numerous researches [7][8], has deleterious effects on intrinsic motivation, i.e. the desire to learn, to be a successful learner, a confident individual, a responsible citizen and an effective contributor. Using Open Badges (as extrinsic motivators) to motivate learners is the most wide spread infantile illness among learning professionals!
The beauty of achievement badges is that they capture the context of the achievement in the criteria: where, how, what resources, etc.. And the collection of achievement badges creates a fabric of interwoven threads of narratives: one's own story is interconnected to others' stories through achievement badges.

**Achievement Badges for Key Competency Badges?**

Could we imagine an Open Badge ecosystem where learners and teachers instead of being focused on normative Key Competency Badges, would be focused on achievement badges, using those as a means for awarding Key Competency Badges? Another question is: if one already has plenty of achievement badges demonstrating the acquisition of key competencies, should one care about gaining one or more key competency badges on top of those achievement badges? If the answer is yes, who would have the authority to deliver them?
As discussed earlier, one problem with a central authority delivering key competency badges is the risk of enforcing compliance and mediocrity (do what is necessary to get it, not more). Conversely, the problem when there is no central authority, or no shared standard, is the fragmentation: if everyone is defining their own criteria, a key competency such as «entrepreneurship» would have many different descriptors, depending on who is awarding the badge.
One way to escape from this dichotomy would to establish a conversational system, where existing definitions would be public and everyone would be able to make reference to them or derive their own from existing ones. Let's say that there is somewhere a definition for learning to learn, but that someone believes that learning to learn should be really called learning to teach (or coach), as pupils should not only 'learn' in the way described in the standard, but 'teach/coach' other pupils, that the definition of a successful learner is someone who cares for other learners and understands that it is his/her social responsibility to help their fellow learners (and teachers! to make reference to The Facebook Incident).
To the conformist, the outcome of a conversational system might look like a mess, to the innovator, as a source of inspiration. One argument against the lack of centralised standards could be that employers will not make head or tail from the myriad of Entrepreneurship Open Badges. But it could be just the opposite: the attention and care brought into crafting a very unique «Entrepreneurship Badge» is not different from the attention and care brought into the crafting of a very individual ePortfolio. What will be of interest to the employer, or the client for the self-employed, is not that all the criteria of the standards have been met, but how the collection of achievement badges convey the richness of the personal experience: I'm not really interested in whether or not you followed the highway code, tell me rather your experience during your trip!
It is from the practice that the standards should emerge, and not the other way around, unless one's belief is that it is the

tail that should wag the dog. Standards, especially key competency standards, when they exist should not be carved in stone. They should be fluid.

**Conclusions (provisional):**
**The rise of the reflective rebel**

For those who are worried about the compliance and subservience embedded in some of the key competency standards, here is a possible antidote: the rise of the "reflective rebel ."

As Alfie Kohn puts it:

> The bottom line is that kids learn to make good decisions by making decisions, not by following directions. If we want them to take responsibility for making the world a better place, then we need to give them responsibilities. That means dialling back our control, whether of the flagrant or the subtle variety.

A reflective rebel is someone who is not afraid to ask why? and say no!

We will not know whether the pupil at the origin of The Facebook Incident, was a wannabe rebel, or a whistleblower. He might just have been a bully looking for immediate gratification gained in humiliating a teacher. That we can't tell. We will not know either if he did reflect on, or care about, the consequences of publicly humiliating a teacher.

If we do not know it is simply because the school board did not care. While the problem with the teacher was public knowledge, the school authorities, for whatever reasons, refused to face it. Its only focus was to keep order, even at the cost of punishing one of the many victims (of the teacher's lack of competencies), the one who made public what was supposed to be a little dirty secret (even if it was not a secret at all).

Had the school board reflected on the situation, it would have been a great opportunity to demonstrate a number of competencies and elicit those to be acquired to become successful learners, confident individuals, responsible citizens and effective contributors:

Communication in the mother tongue: the analysis of the video could have provided excellent material to reflect on the ability to convey a message, something that the teacher obviously had problems with.

Communication in foreign languages: well, slang is not exactly a foreign language… but the video might have demonstrated pupils' high level of mastery, and teacher's need to improve her communication skills with other cultures.

Mathematical competence and basic competences in science and technology: the pupil could have done some research into the causes for poor teacher behaviour, why pupils were willing to take advantage of a weakness, formulated a hypothesis and possible solutions asking feedback from peers and other teachers.

Digital competence: the video on Facebook is evidence of his ability to use video and social media. The inability to hide if from the authorities demonstrates a need to develop competencies related to privacy (self and others).

Learning to learn: well, in that case, it is the school board who has demonstrated its inability to learn from an unexpected situation. Instead of exploiting the situation to create a collective learning opportunity, the only response was to punish one of the victims and show leniency with the failing authority.

Social and civic competences: there is obviously a need for the pupils to develop them as bullying and abusing a weak teacher are not exactly something they should be proud of. The school board is no stranger to the need to develop their civic competencies, as being strong with the weak (the pupil) and weak with the strong (the authority) is not exactly the model of justice of an open and democratic society.

Sense of initiative and entrepreneurship: the pupil definitely demonstrated a sense of initiative and risk taking. It is unfortunate that he didn't pursue his efforts to challenge the disciplinary action and behave like a proper reflective rebel. On the other hand the members of the school board did not show any sense of initiative or creativity: the only response provided was to insure compliance and subservience.

Cultural awareness and expression: having not seen the edited video, it is difficult to comment on that point.

Had the pupil been a reflective rebel, he would have been able to provide evidence from the 8 key competencies defined in the European framework. He would have been entitled to receive the reflective rebel Open Badge! It is unfor-

tunate that the school board did not use this opportunity to support him in that direction, nor to itself reflect on its own values and practices.

If our children have to find innovative solutions to solve the problems we have created, who should we trust more: the conformist looking for the approval of the authority or the reflective rebel? According to The Facebook Incident and the reading of some key competency frameworks it is more likely that what institutions are required is the grooming conformists rather than reflective rebels.

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5

# Assessing the TRANSIt training activitiesfrom the scope of effectiveness and usefulness

**Sílvia Alcaraz-Domínguez**
Universitat de Barcelona, Spain, silvia.alcaraz@ub.edu
**Mario Barajas**
Universitat de Barcelona - DOE, Spain, mbarajas@ub.edu

**Abstract:** In the framework of the TRANSIt project, a teacher training framework has been defined with the purpose to bridge the current gap between competency-based learning policy and practice. The training framework defines teacher competencies, which are supported by a set of training modules designed collaboratively with the aim to enhance the acquisition of these competencies. The framework has been tested in different teacher training contexts carried out in Greece, the Netherlands, Ireland, Spain, Austria and France. The present paper summarises the methodology designed to assess the TRANSIt teacher training scheme regarding two dimensions (effectiveness and usefulness) as well as the evaluation results. Whereas effectivity refers to the change in teacher knowledge and skills; usefulness is concerned with the suitability of the TRANSIt training modules to teachers' professional development needs. To that goal, quantitative and qualitative data collection strategies have been deployed. The activities have made an impact in teachers' competencies, especially regarding facilitating and assessing student learning. Similarly, training activities are in general useful for teachers. Collaboration among peers and the training resources are one of the most valued aspects. These results highlight the characteristics of effective and useful teacher training practices and provide suggestions for improvement, which may inform training programmes and policies aiming to support competency-based teaching.

**Keywords:** *competences, asssessment, effectiveness, usefulness*

## 1. Introduction

Within the TRANSIt project (Transversal key competencies for lifelong learning: training teachers in competency-based learning), implementation has been carried out in two phases:

- Phase A of training activities – Piloting with selected users
- Phase B of training activities with a wider number of users

Both phases included teacher training activities and school-centered work, where teachers have put the results of the training activity in practice. Within this framework, evaluation has been designed with the goal to assess the activities from the scope of: a) effectivity and b) usefulness. All TRANSIt training activities from each phase have been evaluated, in which in-service teachers, pre-service teachers, school leaders and policy makers from Greece, The Netherlands, Ireland, Spain, France and Austria have participated.

The training activities include face-to-face workshops and online learning. Along the TRANSIt implementation, participants have made use of an online learning environment including four training modules specifically developed for this project:

1. Design learning
2. Assess learning
3. Run learning
4. Review learning

The modules contain learning activities supported by resources aiming to increase teachers' knowledge, skills and

attitudes on competence-based didactics and assessment. More specifically, the TRANSIt training modules contribute to teacher acquisition of the four TRANSIt teacher competencies:

- Facilitate student learning
- Assess and report student learning outcomes
- Engage in continuing professional development
- Establish partnerships and collaborations

Teacher learning is monitored with the e-Portfolio assessment method. In the e-Portfolio, the teacher collects evidence to demonstrate his/her skills. Such evidence is compared against a set of criteria, which have also been defined for this project on the basis of state-of-the art teacher training frameworks. If the evidence meets the success criteria, a digital badge is awarded. Digital badges are representations of knowledge and skills.

## 2. Data collection methods

Underpinning the evaluation strategy for the TRANSIt project are two Key Performance Results, which have been determined to assess the success of TRANSIt implementation:

- Effectiveness: refers to the profit that stakeholders obtain from participation, i.e. the growth of teachers' competencies in terms of knowledge, skills and attitudes has been monitored

- Usefulness: is concerned with the satisfaction by stakeholders about the training framework, in terms of:
    - Training design: including the learning activities, readings/viewings, resources.
    - Assessment system: regarding the e-Portfolio and the digital badges
    - Learning processes: assessing the interactions among teachers and with TRANSIt tutors

These indicators have led to the use of a combination of quantitative and qualitative data collection instruments described in the following subsections.

### 2.1 Quantitative

Two quantitative data collection instruments have been designed and administered in the participating countries. Below we describe each tool in detail.

**Questionnaire for TRANSIt participants**

The questionnaire for TRANSIt participants has been designed on the basis of existing, validated data collection tools. The questionnaire has three parts. The first part of the questionnaire is has been adapted from the Constructivist On-Line Learning Environment Survey (COLLES). It was introduced to assess postgraduate distance education for teachers [6]. The "COLLES preferred and actual form" generates a measure of opinions by asking participants about both their preferred and actual experiences in on-line learning environments Statements are grouped into six scales: 1) Relevance: How relevant is on-line learning to teachers' professional practices?; 2)Reflection: Does on-line learning stimulate teachers' critical reflective thinking?; 3) Interactivity: To what extent do teachers engage on-line in rich educational dialogue?; 4) Interpretation: Do teachers and tutors make good sense of each other's on-line communications?; 5) Tutor Support: How well do tutors enable teachers to participate in on-line learning?; 6) Peer Support: Is sensitive and encouraging support provided online by fellow teachers?. Each scale contains four items. In each item, the participants grade what they prefer and what they have experienced by means of a five-point Likert-type response scale: Almost Never (1), Seldom (2), Sometimes (3), Often (4), Almost Always (5).

The second part of the questionnaire focuses on participants' experience with the e-Portfolio assessment method. Previous studies have shown correlations between learning motivation and e-Portfolio satisfaction [2]. In particular, Jun et al. [3] have developed a survey to assess an e-Portfolio-based Professional Development programme for teachers. The following sections have been selected and adapted for the purposes of TRANSIt:

1. Teachers' overall perception/personal value about the ePortfolio
2. Teachers' Perception about using the ePortfolio enhancing the evaluation process

The role of badges is assessed in the third section of the questionnaire, especially from the scope of learning motivation. There have been previous attempts to award badges

to learners and there is a raising interest in the subject in the framework of the open badges initiative by the Mozilla Foundation [5]. For the purpose of the TRANSIt project, questionnaire items have been adapted from badges surveys from Abramovich et al. [1] and Santos et al. [4].

The questionnaire has been administered online and 22 questionnaires have been collected. The questionnaires have been analysed quantitatively, i.e. deriving averages from each section.

**Event satisfaction form**

The TRANSIt event satisfaction form has been designed for participants to express their opinion about the content, organisation and other practical aspects of the training activities in which they have participated. The form includes 10 items to be graded from 1 (very bad) to 5 (excellent), as well as comments and improvement suggestions. A total of 65 forms have been collected.

### 2.2 Qualitative

Qualitative data collection instruments have been designed with the purpose to complement the data obtained in a quantitative way. This is to say, it enables to obtain a deeper understanding of the learning outcomes and the feelings that participants have experimented as a result of participating in the TRANSIt implementation. The following tools have been used:

- E-portfolio assessment method: the evidence that teachers have submitted to the TRANSIt web portal environment (learning scenarios, resources, reflections, etc.) has been compared with the success criteria stated in the TRANSIt training framework. 12 learning scenarios have been analysed.
- Interview/focus group guide: it enables to assess the new knowledge and skills that participants have gained as a result from participating in the training. Second, it is aimed to understand to what extent the training has met their expectations and whether they have improvement suggestions. A total of 27 interviews have been performed in a quiet setting and have been voice recorded when possible.
- Skill check: teachers self-assessed their TRANSIt competencies with a skill check, both at the beginning and at the end of the course. The difference from the level of each competency declared at beginning and that from the end of the course has been calculated for 10 teachers.

## 3. Results

Each participating country has evaluated the implemented activities following the methods stated above. The following subsections summarise the results for each evaluation dimension.

### 3.1 Effectiveness

Effectiveness assesses the profit in terms of learning that teachers obtain from participating in the TRANSIt training activities. In other words, it measures the growth in teachers' knowledge, skills and attitudes regarding competency-based learning.

The four teacher competencies by the TRANSIt training participants have been assessed with the following evaluation instruments: the skill check enabled teachers to self-report on their level of each competency, once at the beginning and then at the end of the training activities. Further, the learning artefacts uploaded to the TRANSIt web portal environment such as learning scenarios, assessment plans, resources, etc. have been compared with the success criteria stated in the training framework design, thus following the e-portfolio assessment method. Finally, the interviews and the focus groups helped to collect teachers' reflections on each TRANSIt teacher competency.

**Facilitating student learning**

The competency to facilitate student learning refers to the skills to engage students in purposeful and appropriate learning experiences. Results from the skill check show that on average, half of the teachers have increased their competency in facilitating student learning between the start and the end of their participation in the TRANSIt implementation.

These findings can be complemented with an assessment of the learning artefacts produced by teachers during the training. The learning scenarios designed show that the transversal key competencies of the students have been taken into account. In other words, all the learning scenarios comply

with the success criteria, i.e. they include at least one different criterion-based objective, clearly expressed success criteria and a well-defined context to support learners' performance/activities.

Review also shows that the majority of teachers have included learning material supporting their learning scenarios. The main material provided is data collection sheets. Furthermore, teachers have selected technologies enhancing learning and assessment. Some of the technologies chosen are:

- E-portfolios
- Edmodo social network for education (https://www.edmodo.com/)
- Digital badges
- Text processor and spreadsheets
- Presentation software: Power Point, Prezi (http://prezi.com/)
- Portal for learning history at the museum (www.habsbuger.net)
- Using films for learning (www.bildungsmedien.tv)
- RSS feeds

The evidence provided and teachers' own reflections demonstrate that they provided support and guidance to learners and they monitored the learning process.

Moreover, extracts from the interviews give reasons to believe that teachers are able to include student competencies in the design of their learning scenarios. As one teacher states, "I aim to foster linguistic competency by giving feedback about spelling errors in the essays of my students, even if we are studying history". Similarly, another teacher states "I wanted to foster sense of initiative in my scenario by making my students work in an autonomous way".

**Assessing and reporting student learning outcomes**

Regarding teachers' competency to assess and report student learning outcomes, the skill check shows that, on average, almost half of the teachers have increased it between the beginning and the end of the TRANSIt training.

All the learning scenarios analysed, except for one, use at least 2 different assessment strategies, one of them being learner centered. Peer assessment is used in the majority of learning scenarios, whereas self-assessment is deployed in more than half of the scenarios. Rubrics are present in the majority of scenarios. This shows that teachers are aware and able to plan learning scenarios using competency-based assessment techniques.

**Engaging in continuing professional development**

The skill check shows that one quarter of teachers self-report an increase in the competency to engage in continuing professional development after participating in TRANSIt. Similarly, during one of the focus groups, a teacher stated: "Having shared my learning scenario with my colleagues, I would design it in a different way because now I'm really trained". Another teacher states that "In order to make a real change, I should reflect on what I have learnt in this course and put it into practice. Usually, this is the greatest challenge for me".

*Figure 1. TRANSIt workshop at the University of Barcelona*

**Establishing partnerships and collaborations**

Some participants from TRANSIt implementation phase B self-report an increase in their capabilities to establish partnerships and collaborations.

By examining the learning scenarios and the resources uploaded by teachers to their e-portfolios, we can see evidence that some of them have a slight command of this competence. As an example, a teacher plans to organise a visit with the students to a museum and in this way to put the topic being studied in the scenario in a wider context.

Other teachers involve the parents in the learning activities. As one teacher puts it, "The father of one of my students is very interested in history and he motivated me and my students to go ahead with a learning scenario about how society has changed". Another teacher includes in her learning scenario an activity in which students write an article in the school magazine explaining what they have learnt.

### 3.2 Usefulness

The usefulness indicator evaluates to what extent the training design, the assessment system and the learning processes satisfy teachers' needs and expectations. The instruments deployed to collect data on this indicator have been the event satisfaction questionnaire, the questionnaire for TRANSIt participants and the interview/focus group guide. Results are summarised below.

#### Training design

Data from the event satisfaction form shows that participants were satisfied to a great extent with the TRANSIt training design and programme. For instance, Irish teachers state that the training modules "reflect accurately the activities included in their professional practice". Similarly, teachers are generally satisfied with the training materials provided. At the end of the training, most teachers showed an interest in staying involved in TRANSIt, in staying registered in the TRANSIt web portal environment "with the purpose to download the learning materials" and "to examine in more detail the learning scenarios from my colleagues and learn from them".

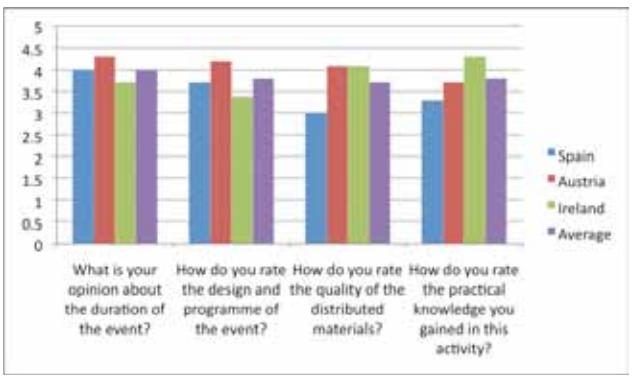


*Figure 2. Comparative analysis of the event satisfaction questionnaire answers*

Teachers value the practical knowledge gained, as shown by an average of 4.2 out of 5. The learning approaches promoted were novel for most participants and they are generally regarded as interesting methodologies. Participants have learnt how to apply these approaches in the classroom, as stated in the focus group. More specifically, the good practice examples used in Austria and in Spain have been well received by the teachers. However, most of them expressed that they would take up the idea and adapt the examples to the specific needs of their own students.

#### Assessment approaches

Participants' feelings towards the e-portfolio and the evidence-based assessment approach have been gathered through 7 items from the questionnaire for TRANSIt participants. The item with the highest satisfaction refers to the assistance provided by the TRANSIt tutor in selecting and uploading learning evidence to the web portal environment, with an average of 4.9 out of 5. Consistently, teachers agree with 4.1 out of 5 with the easiness to communicate with administrators about the materials collected in the e-portfolio.

Moreover, teachers think that the e-portfolio is a suitable assessment method for their professional development, as shown by the average of 4.2 in the item "I would recommend to my fellow teachers that they use the e-portfolio to demonstrate fulfilment of regional or national Teacher Quality Standards". In contrast, one of the lowest scores is given to the communication with colleagues about the e-portfolio.

Within the TRANSIt countries, some training activities included digital badges to represent teacher competencies. In other words, teachers who achieved the learning goals of the training modules could earn badges: "Student learning facilitator", "Assessor and reporter of student learning", "Engaged in continuing professional development" and "Establisher of partnerships and collaboration". As stated in section 2, the attitudes that participants have towards digital badges as part of the assessment of TRANSIt training have been gathered with questionnaire for TRANSIt participants.

The lowest score is obtained in the item "Badges have contributed to my engagement in the training", thus not confirming that digital badges could motivate teachers to keep

learning. However, results show that we managed to convey appropriately the meaning of digital badges and how to earn them, as shown by an average of 4.4 out of 5. On average, teachers want to earn more badges (average of 3.4 out of 5).

**Learning processes**

As part of the TRANSIt training activities, teachers engaged in a series of learning processes in the online environment, and they also interacted with the tutor and with their peers. Items 1 to 48 of the questionnaire for TRANSIt participants assessed their satisfaction with these processes. Results show that generally, teachers are satisfied with them because their actual experience is almost equal to what they usually prefer.

More specifically, the aspects of the learning processes achieving the highest satisfaction is reflection, interactivity and peer support, where the average difference between teachers' preferred and actual experience is almost zero (i.e. 0.1). Indeed, there is no difference between teachers' preferences and their actual experience in the items "thinking critically about the ideas from my peers" and "peers asking me to explain my ideas". This shows that the interaction among fellow teachers was felt as useful and productive for most participants.

These findings can be further interpreted with outcomes from the focus groups. As an example, participants in Spain agreed that face-to-face sessions were very useful because they could comment and ask questions about the learning scenarios of their peers and vice versa. As stated by one teacher: "I have learnt to design scenarios fostering the competencies of my students, not so much while designing my own scenario but mostly as a result of the exchange with the other teachers involved in the course".

Interactions among participating teachers are appreciated also in Austria and in Ireland. Most teachers like to work with colleagues and regard it as a great benefit to have the opportunity to share and exchange competency-based learning and teaching experiences. As an example, an animating exchange took place among creators of the discussed project-based or/and cross-curricular learning activities in one of the face-to-face workshops. Participants seriously discussed on the guided questions and new ideas and helpful input was exchanged among teachers and teacher trainers.

In contrast, the greatest mismatch between teachers' preferences and actual experience lies in interpretation and tutor support, with an average difference of 0.3 points between teachers' preferred and actual experience. This indicator refers to teachers understanding of the messages from their peers and to the sense made by the teacher and the tutor of each other's messages during the training.

**4. Conclusions**

On the basis of the results presented above we can state the aspects in which the TRANSIt training activities have been satisfactory as well as its weak points. The analysis of the learning scenarios produced and the statements made by most participants reflects that they have enhanced their competencies in facilitating student learning and in assessing and reporting student learning outcomes. In other words, teachers have demonstrated their skills to define competency-based learning objectives and to design and run a learning scenario fostering the transversal competencies of their students with relevant resources and technologies. In their own opinion, the most important learning outcome has been "the proposed teaching approach and how it helps to foster student transversal competencies". Moreover, teachers' scenarios demonstrate their skills in learner centred assessment methods such as peer and self-assessment. Rubrics are suggested in the majority of the learning scenarios as a means to record student learning. Some teachers manifest an increase in their capabilities to engage in continuing professional development and in establishing partnerships and collaborations.

Generally, the TRANSIt training activities implemented in the participating countries have been perceived as useful. The modular concept of the TRANSIt framework, based on designing, preparing, running and reviewing competency-based learning activities was felt as a very useful approach. Most teachers agreed that a more accurate structuring of competency-based learning activities would bring more benefit for their student´ s competency acquisition. The programme and the materials obtain a high score on average in the questionnaires, and the guided discussion re-

vealed that some teachers' were interested in accessing the TRANSIt web portal environment even after the end of the implementation period. Teachers agree with the key point of the e-portfolio assessment method, i.e. an evidence-based assessment system. There is proximity between what teachers prefer while they are usually learning and what they actually experienced in the training activities, especially regarding reflection, interactivity and peer support.

For this reason, face-to-face workshops and the TRANSIt web portal environment should offer to be a platform for active interexchange between teachers. Especially the discussions about the experiences with Best Practice examples seemed to be very motivating for teachers, even those who regard themselves as experienced in competency-based learning and teaching.

This being said, the challenge for the TRANSIt training framework is to implement it in countries which already have a strategy for competency-based learning implementation, such as Austria. However, the activities performed showing local best practices and initiatives have proven to be useful for teachers. It proved to be useful to adapt the TRANSIt training framework to the specific needs of the respective audience as the needs and expectations concerning competency-based learning and teaching vary a lot. Some teachers mentioned that especially the digital badges that they obtained are ahead of time and will maybe be interesting in the future.

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6

# Competency-based education: learning at a time of change

**Neil O'Sullivan**
Innovative Together Ltd,
neilos@innovate-together.com
**Dr Alan Bruce**
Universal Learning Systems,
abruce@ulsystems.com

**Abstract:** There is a growing trend towards competency based education in Europe, emphasised by the implementation of European Key Competency Framework in many jurisdictions. This paper reflects on the attributes of competency-based education its domains and teaching approaches for effective competency teaching and learning. It relates this to wider social and structural changes.

**Keywords:** *E-Learning, Competency Based Education*

## 1. Introduction

In 2013, an advanced European think tank on education chaired by former President of Ireland, Mary McAleese, produced the Report of the High Level Group on the Modernization of Higher Education. This report is a magisterial overview of the challenges and opportunities facing educators and learning designers, in a world radically different from that which has gone before. Early on they produce a clear conceptual overview:

*That which is known is no longer stable. The shelf-life of knowledge can be very short. In many disciplines what is taught and how it is taught are both stalked by the threat of obsolescence. In a changing world, Europe's graduates need the kind of education that enables them to engage articulately as committed, active, thinking, global citizens as well as economic actors in the ethical, sustainable development of our societies.*

This neatly sums up the changed landscape of the world of learning. Learning and change now proceed hand in hand. It is no longer about knowing lots of facts and information (let alone being assessed for intellectual capacity by the ability to memorize or recall such information). Rather it is about the ability to make informed decisions, to execute with skill to a high level consistently without supervision and to display an ability to be creative. It is, finally, about citizenship, autonomy, values and sustainability. These are the critical dimensions that underpin the emerging – but rooted in ancient practice and tradition – field of competence-based learning.

Effective learning is learning which is lasting and capable of being put to use in new and differing situations. Learning has traditionally been conceptualized as theory (but based on some form of academic framework) where achievement is judged by ability to recall key points, information imparted or details and sequences memorized. The leap from this to the ability to recall, act and perform to set standards of ability and expertise is the leap to a framework based on competence. In this paper, we discuss competency in teaching and learning systems.

This examines in particular the type and form of learning strategies that are expected to promote competency-based learning. Teaching and learning in any curriculum require common goals, shared responsibility and accountability between teachers and learners, and supportive or enabling environments to maximize success in learning. Shaping those common goals and shared responsibility calls for some

sense of community between and among learners and their facilitators. Particularly with regard to competence, traditional societies have always valued what people could do and how this knowledge might be passed on to future generations. More importantly, skill and competence now also become integral elements in those understandings of citizenship and ethical best practice identified in the McAleese Report

We first propose to define competency-based education. Then we review competency-based education and the domains and specific attributes of teachers and learners that are required to make competency-based education successful. This is followed by a brief discussion identifying competency-based objectives and the teaching methods and learning activities that contribute to competency development at a time of change and structural modification in educational delivery systems. We finish with the key qualifications points of competency-based education and how they can relate to the dynamics and needs of a changing environment, social, economic and cultural.

**2. What is Competency-based Education?**

Competences have been defined by European bodies, as well as by educational experts, and are seen to consist of three interrelated ingredients:

1. A knowledge component (the understanding part)
2. A behavioural component (the overt behavioural repertoire)
3. A value component (including values, beliefs and attitudes).

A competent person performing a task will possess a combination of skills, knowledge, attitudes, and behaviours required for effective performance of the task or activity. A competence is therefore defined as the holistic synthesis of these components.

At another level, a competence may be divided in three components or aspects. It is the ability of a person to show:

1. A particular behaviour in
2. A particular context and with
3. A particular quality.

Defining competency is complex. Defining educational competency can be even more complex. The Organization for Economic Cooperation and Development (OECD) through PISA, (Program for International Student Assessment) has undertaken very valuable work to define competencies. It has also created a framework for comparing student competencies for purposes of assessment. A report completed by PISA states:

*"A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing upon and mobilising [mobilizing] psychosocial resources (including skills and attitudes) in a particular context. For example, the ability to communicate effectively is a competency..." [PISA]*

Education and schooling systems need to help students build a wider base on which they can construct their present – and future - professional competences. Rapid changes in technology and in the way people work, make hard skills rapidly obsolete. Learning to learn (one of the seven competences of the European Key Competences Framework) is fundamental. Efforts to embed competence therefore often concentrate on developing transversal skills, or soft skills, such as the ability to think critically, take initiatives, solve problems and work collaboratively. It is this dimension of competence that writers see as best being able to prepare individuals for today's varied and unpredictable career paths.

**3. Competency-based Teaching**

The attributes of competency-based teaching (listed below) are teacher characteristics, methods and expectations designed to contribute to learner success. They demonstrate the shared responsibility of teachers and learners to reach the goal of competence. The most important characteristic of competency-based education is that it measures learning rather than time. Students' progress by demonstrating their competence. This means they prove that they have mastered the knowledge and skills (competencies) required for a particular course or study program. The length of time is secondary to this goal. While more traditional models can measure competency, they are time-based -- courses last about four months, and students may advance only

after they have put in the study or application time. This is true even if they could have completed the coursework and passed final assessment stages in less time. So, while most school systems hold time requirements constant and let learning vary, competency-based learning holds learning constant and lets time vary.

**Attributes of Competency-based Teaching**

- Understanding how learners learn
- Matching principles of learning and teaching
- Facilitating not controlling learning
- Modelling humility, critical thinking, respect, competency and caring at all times
- Supporting acquisition of knowledge, skills & professional behaviours in all learning domains (cognitive, psychomotor, affective)
- Promote & expect learner accountability for learning
- Provide timely, specific feedback on learner progress beginning with learner self-assessment
- Individualize learning experiences according to needs
- Expect increasing complexity of performance as the learner progresses throughout the programme

**4. Teaching and effective facilitation of competency development**

Competence based education programs build from the idea that it is more important to focus on outcomes (what a student knows and can do) than on inputs (how students learn, where they learn, or how long they take). This break from inputs means that CBE programs are free to explore new ways to help students learn and new dimensions of what constitutes a "course." Some CBE programs are designed to allow students to learn in a variety of formats, sometimes drawing on open educational resources (including written materials, videos, recorded lectures, etc.) or hands-on, project-based learning. Many programs are also designed for students to progress at their own pace, rather than at a pace dictated by semesters or credit hours. This means that motivated and efficient students can complete their programs in less time.

The invigorating benefits of a fresh focus on and insistence on quality teaching are often felt widely and rapidly if effective. They will be felt in complex ways - from increased teacher professional fulfilment and satisfaction to increased student satisfaction and retention. Benefits also touch on better knowledge and skills transfer, more efficient use of resources and better sustainable learning outcomes. The sum of the parts will harness a more confident, competitive and creative dynamic energy throughout the EU education sector, each institution giving its best, to the best of its ability, given its remit and conditions.

Teaching strategies need to be matched to the domain of learning. We briefly outline the various domains and how a competency-based curriculum may be implemented and the strategy that may be chosen.

**Psychomotor domain:**

- Demonstrate expected ways to perform a given skill. Allowing learners to practice for a while, and then asking for a return demonstration of that skill.
- Setting up models or creating a simulation exercise in the practical laboratory where learners can have repeated practice of skills with peers and/or teacher supervision.
- Arranging for sufficient practical experiences requiring skill performance of the competencies under direct supervision.
- Creating a valid and reliable assessment tool for use in determining competency in skill demonstration.

**Affective domain:**

- Creating "values clarification exercises" for personal values.
- Providing frameworks for written analysis of learner activities against measurable outcomes
- Structuring opportunities for role play requiring recognition of differing values and beliefs, with time for discussion of how these differences may affect one's ability to perform the competency
- Arranging for the discussion on different values and beliefs,
- Creating valid and reliable assessment tools for use in determining competency good practice and integrity, respect for all.

**Cognitive domain:**

- Developing case studies from actual practice requiring

discovery or problem-based learning to determine the most appropriate, evidenced based approach to competency.
- Supporting learner-led discussions, structuring debates to address practical situations.
- Always requiring that learners provide a rationale for their responses to knowledge questions or plans.
- Avoiding temptation to answer every learner question, especially when learners should know the answer.

Other strategies include self-study modules with suggested learning activities that the learners can complete on their own prior to interaction with fellow learners and teachers. It is important that teachers provide ample time for discussion/dialogue and clarification of concepts to be learned. They also need to encourage and help the learner use their own knowledge and ideas to find possible solutions. One of the most effective teacher strategies for guiding learners to discover how to proceed or act is Socratic questioning. The primary purpose of the Socratic method is to encourage learners to challenge how they are thinking, what they are thinking, and what revision of their thinking will lead towards the goal of becoming a competent.

A rapidly changing society has meant that teachers have found themselves facing a range of new challenges in the classroom in recent years. The inclusion of children with special educational needs into mainstream schools and the unprecedented increase in the numbers of students from different ethnic and cultural backgrounds have been identified as among the most significant challenges. New technologies have emerged which play a central role in the way young people communicate and learn and teachers have been required to adapt their teaching to reflect the new reality. An increasingly diverse society, changing family structures and the emergence of new social problems have added to the complexity of teachers' role.

Each of the competency based teaching strategies at a time of significant community change is aimed at helping learners develop new ways of thinking about what they are learning, encouraging them in their discovery of new knowledge and skills using critical thinking, and supporting their efforts to integrate this new learning into their practice. The teacher becomes a coach or facilitator of learning, rather than an all-knowing sage telling the learner what to learn, how to learn it, and what to do with the new learning.

**5. Implementing Competency-based Learning**

Competency-based learning is a way of structuring learning activities so that the individual learner can meet a predetermined set of competencies. Given that learners have a variety of ways of learning or learning styles, it is important for them to recognize that competency-based learning will require that they actually perform or do, rather than learn by observing. Observation, reflection and listening are important learning activities, but competency demonstration is the expected outcome for competency-based education.

The following list summarizes the key attributes of competency-based learning.
- Understand how one learns best (style)
- Understand exactly what is expected outcome(s) of learning
- Take responsibility for one's learning
- Motivated to learn – goal oriented
- Ethical person and practitioner
- Critical thinker
- Self-assess learning & performance
- Commitment to ongoing learning

There are several learning activities that are competency-based. Examples of some of these activities follow related to the domain of learning.

**Psychomotor domain:**
- Review written description of a particular skill (text, handouts).
- Take time for repeated practice of skills in the safety using models, simulation if available, or peers as patients supervised by teachers until mastery of the skill is demonstrated.
- Seek out practical experiences that allow the learner to increase confidence as well as competence in the skills required.

**Affective domain:**
- Review text for content on definition of values.

- Participate in selected values clarification exercises for personal values provided by teachers (self-study or group work).
- Write up an analysis of a code of behaviour and values and share with peers and teachers.
- For many learners, becoming a competent begins with observing positive role models of practice to reflect on: This is who a competent person is. This is what a competent person does.

**Cognitive domain:**

- Competency-based learning requires high levels of critical thinking and reflection (metacognition – thinking about thinking). Such skills are learned best with some form of discovery-based learning or problem-based learning.
- The goals of discovery or problem-based learning include helping learners become active participants in and take responsibility for their own learning, encouraging the development of critical thinking by supporting learners' efforts to retrieve and retain knowledge and apply it in practice (rather than telling them what to think or do), and creating learners who develop the habit of life-long learning in order to stay current in practice.
- Teamwork is an essential component of this type of learning as many learning activities are structured for groups of learners working together to discover the best solution to a given need or problem in both theoretical and practical work.
- Other cognitive learning activities creating and following an individualized learning plan, self-directed reading and completion of suggested activities that will add to one's knowledge and experience base, and self-directed use (browsing) of the internet for resources related to topics being learned.
- Prepare for and lead seminar discussions.
- Keep a journal or log of progress in learning

**6. Competency-based education practice**

Defining Competency-based Objectives

Competency-based education and its associated teaching and learning approaches have received a good deal of support in education systems in recent years. Competency-based education is characterised by the learner's engagement and activity in all aspects of acquiring the knowledge, skills and professional behaviours. Many contributors state that competency-based education must involve teaching and learning strategies that facilitate development and demonstration of a competency. A critical feature of competency-based education must include a clear, evidence-based definition of the learning outcomes and objectives. The learning objectives must include demonstrated for performance criteria of the role (i.e., the specific competencies). This clarity is vital to both teachers and students. The expected outcomes of learning, how performance is measured and how the learning objectives relate to the outcomes must be clear.

When writing competency-based objectives consider the following questions:

| | |
|---|---|
| **Objective** | **Is the objective related to intended outcome(s), rather than the process for achieving the outcome(s)?** |
| **Performance** | **Is the performance of the learner relevant to the learning outcome?** |
| **Conditions** | **Are the conditions, the context, of the performance relevant to the learning outcome?** |
| **Criteria** | **Are the criteria relevant to the learning outcome? Are they tangible? Are they measurable? Are they sufficient?** |
| **Performance** | **What will the learners be able to do?** |
| **Conditions** | **What are the conditions under which they have to perform?** |
| **Criteria** | **How will we/they know if they perform successfully?** |

## 7. Pedagogical considerations in Competency-based education

Competency-based education must include attention to the learner's needs and styles, providing the time needed for the learner to acquire and repeatedly perform or demonstrate the expected competencies (knowledge, skills, professional behaviours) and creating a supportive environment for learning. Competency-based education can be pursued through various teaching approaches. However, all curricula need to be evidence-based and outcome focused and all teaching strategies need to be matched to their learning domain (psychomotor, cognitive and affective). A greater emphasis on the teacher as a professional educator is accompanied by other profound changes in the design and delivery of programs to create productive learning environments. Teaching and learning can, for example, become a team activity across disciplines but also within them. Quality programs are designed – and student performance assessed, on the basis of agreed learning outcomes – as a team product by all faculty involved in delivering them, rather than being simply an accumulation delivered and evaluated independently from one another. It is still the exception that students are deliberately and explicitly empowered by their teachers (and by the wider schooling system, through suitable information and support activities) to manage their own learning. But new methods in teaching and learning are being developed in ever more education institutions. And one of these is competence based learning. Competence based learning emphasizes rich learning environments that enable students to engage in meaningful learning processes. The most distinctive features of this approach may be summarized as follows:

- *Meaningful contexts*
- Teachers create meaningful contexts in which students in a natural way experience the relevance and the meaning of the competences to be acquired.
- *Multidisciplinary approach*
- Competences are holistic and as a consequence the educative approach becomes integrative and holistic.
- *Constructive learning*
- Competence based education has its roots in social constructivism. So, learners engage in a process of constructing their own knowledge by interaction with their environment, rather than as a process of absorbing the knowledge that the traditional teacher might try to transfer to them. By focusing on the construction of models, products, guidelines, rules of thumb, reports, or other tangible outputs the learning easily and naturally will turn out to be constructivist.
- *Cooperative, interactive learning (with peers, teachers.)*
- Learners develop and construct their own knowledge and seek ways to make optimal use of other people's competence in their learning journey. This is what social constructivism is about. For learning outcomes aimed at developing individual and personal competences, the approach must take diversity of learner needs into consideration to meet leaner goals and objectives.
- *Discovery learning*
- Discovery learning as opposed to receptive learning means making content available and accessible and that the way of acquiring this knowledge or competences, could not be just a process of providing information, but should always be embedded in a discovery based approach.
- *Reflective learning*
- Competence based learning places an emphasis on the learning process. As learners reflect on their own needs, motivation, approach, progress, results etc., they develop learning competences that may be considered "learning to learn".
- *Personal learning*
- In competence oriented theories, learning is a process of constructing the learner's personal knowledge and competences. Information, knowledge, strategies only become meaningful for a person if they become an integral part of their own personal body of knowledge and competences.

## 8. Summary

Competency consists of three interrelated ingredients: a knowledge component (the understanding part), behavioural components (the overt behavioural repertoire) and a value component (including values, beliefs and attitudes). Teaching and learning strategies need to match to the appropriate learning domains. Competence based learning places an emphasis on powerful or rich learning environments that enable teachers and students to engage in meaningful learning processes.

One major change in recent decades is the massive internationalization and globalization of science, economics and politics. This development is likely to continue, accelerate and expand into ever more sectors of public and private life – especially in the labour market – driven not only by the exponential growth of world trade, global capital investment and human mobility, but even more so by new media. This development will not only impact on the content of traditional subjects ('the international dimension') but also change the ways of delivery and reception. Any serious discussion about teaching and learning has to deal with the impact of globalization on education, including education.

These trends were in turn related to a number of generic themes under which social processes and conditions would be shaped:

1. Rationalization (effectiveness, efficiency and innovation)
2. Networking and social capital
3. Empowerment and participation
4. Information and lifelong learning.

Among many other things, this poses significant issues for education and learning systems which currently exist and which themselves play such a significant part in human understanding and shaping of values-driven learning. Wiley and Hilton (2009) relate much of this dynamic to the question of openness as a fundamental value underlying significant changes in society and a prerequisite to changes educational institutions need to make in order to remain relevant to the society in which they exist. The authors conceptualize the radical change of human systems within a framework of six ways deemed critical for education to recognize and understand:

1. From analog to digital
2. From tethered to mobile
3. From isolated to connected
4. From generic to persona
5. From consumers to creators
6. From closed to open.

An important aspect to competency-based education is that practice-based learning requires direct supervision and multiple opportunities for the learners to demonstrate their competency in practice over a period of time. Competency objectives must include outcomes, criteria, performance standards, conditions that are tangible, measurable and relevant. Implemented effectively, competency-based education can improve quality and consistency, shorten the time required to graduate, and provide true measures of student learning.

All this fundamentally changes the faculty role. When faculty serve as lecturers, holding scheduled classes for a prescribed number of weeks, teaching takes place at the lecturers' pace. For most students, this will be the wrong pace. Competency-based learning shifts the role of the faculty from that of «a sage on the stage» to a «guide on the side.» Faculty members work with students, guiding learning, answering questions, leading discussions, and helping students synthesize and apply knowledge. This will be the key landmark in the change to competence based learning in a time of change.

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7

# Communication and creativity skills: Non-violent Communication (NVC) and Thinking at the Edge (TAE), two methodical approaches

**Nikolaos Kypriotakis**
1st Junior High School of Markopoulo, Greece

**Abstract:** This paper deals with two main topics: communication skills, cooperation, empathy, on the one hand, and creativity skills, innovation, learning how to learn and how to be creative, on the other. Regarding the first topic, the attempt to apply the Non-violent Communication (NVC) method in 1st Junior High School of Markopoulo is described, and regarding the second one, the initiative to teach the Thinking At the Edge (TAE) method to Junior High School pupils in order for them to apply that method on writing original papers and texts.

"Most people encapsulate themselves, shut up like oysters, sometimes before they have stopped being undergraduates, and go through life barricaded against every idea, every fresh and unconceptualized perception. It is obvious that education will never give satisfactory results until we learn how to teach children and adults to retain their openness. But the practical problem is as yet hardly considered by professional educators." Aldous Huxley, ("This Timeless Moment", Laura Huxley [1]).

Contrasting the 'objective' type of validity inherent in the sentence «The Earth turns around the Sun» with the 'subjective' one, inherent in the sentence «The Sun revolves around the Earth», and drawing on Husserl 's analysis of the pre-Copernican understanding about the planet Earth and on his following analysis of the crisis of meaning in our time, I come to the conclusion that the expe´ rie´ n´ tial, empirical, natural and corporeal validity of personal meanings is neglected or overlooked in the common, conventional education. In line with the analysis of the key factors of the educational fields «learning how to learn» (resilience, resourcefulness, reflectiveness, reciprocity) and «teach how to learn» (analysis that I borrow from Guy Claxton [2] [4]) and in line with some of the current integrative developments in Education [9] (especially those that emphasize «embodied knowledge» and in particular those relating to the application of Focusing in Education [3] [5]). According to Guy Claxton our intelligence can be clear and also fuzzy or foggy, evolving or in a continuing development process. It may be explicit and also implicit, intuitive. It can be abstract, verbal and also practical, tangible, embodied. It may be merely illustrative, explanatory and at the same time experiential, observant and observational. It may be rapid, quick, as well as slow, patient, calm, delicate. It may be logical but also emotional. As he notes, the purpose of education is to build skills and talents of real life and the real world. Thought - the acquisition and management of knowledge - is what needs to be done when our unconscious ability is 'leaving' us.

Following the above mentioned double nature of intelligence my creativity moves towards two different directions. I will present here only those of my actions, as a professional educator, which offer me excitement and enjoyment at school.

On the one hand, in the wider context of the use of new technologies in edu´ cation, I create interactive simulations and on-line applications, virtual labo´ ratories for certain specific phenomena, interactive e-books and assessment

acti´ vities/exercises, using several of the most modern authoring tools for educational e-learning content for Science (especially Physics, Chemistry and Biology).

On the other hand, in a completely different direction, following my faith in the primacy of empathy (and human relations) in education (agreeing at this point with Marshall Rosenberg, founder of NVC [7] [8] [9] [10]), I explore the use of NVC in mediation, with peer mediators/facilitators, in schools [11]. After being trained myself, I train a group of students as peer mediators (under the supervision of the Hellenic Association of Counselling) to resolve and prevent conflicts at school. In a dif´ ferent project, my colleagues and I, we explore the use of NVC with regard to the application of cooperative learning in a pilot class of our school for two consecutive years under the supervision of the group «Schools Cooperative Learning and Prevention» of Ms Mika Haritos-Fatouros, Aristotle University of Thessaloniki.

In the same direction, a group of students is taught the method TAE, which was developed by the philosopher Eugene Gendlin (The Focusing Institute, NY, [5] [6]) in order for them to be facilitated to write genuine, authentic work, aiming at highlighting their phenomenological and perceptual field and developing and promoting their creativity and their experiencing process in general, in a way which is methodically and metho´ do´ lo´ gically appropriate. This project was performed under the supervision of the Hellenic Focusing Centre[15] (Person-Centered & Focusing-Experiential Counselling & Psychotherapy).

The TAE method aims mainly at restating our conceptual and linguistic «landscape», when (fine) creativity and innovation is required and not just the application of more-or-less already known methods of solving problems, and when the author's felt sense of satisfaction is what determines the outcome. It is a multileveled method with great experiential depth and breadth, in which the «more» of our embodied intricacy, authenticity, intelligence and «tacit knowledge» is being promoted and carried forward through the multiple process of its symbolization.

All the learning, educational objects, worksheets, lesson plans and teaching projects that I have developed (in both of the above directions) can be found in the following digital communities in 'Open Discovery Space':

- For natural sciences, in the digital community: Science in Gymnasium[16], but also in the school blog: Φυσική – 1ο Γυμνάσιο Μαρκόπουλου[17] ("Physics – 1st High School of Markopoulo") which leads to all other blogs, websites, channels, communities created
- For Focusing and NVC: Focusing-creativity and NVC in the classroom[18]. See also the general introductory online presentation: Μη-βίαιη Επικοινωνία στο Σχολείο[19] ("Nonviolent Communication at School", in which the basics of NVC, along with some examples are presented).
- For TAE: Thinking At the Edge (TAE) - Educational Applications[20], but also the website: http://thinking-at-the-edge.weebly.com, which was created to support the Open Discovery Space (ODS) workshop given to teachers, school counsellors, psychologists, psychotherapists, etc., having as purpose to teach the preparation phase and the first phase of TAE, and demonstrate TAE applications in teaching and in the school environment in general.

In the following part the key features of the NVC [7] [8] [9] [10] (observations, feelings, needs, requests) and TAE process [5] [6] are presented, the trainers-teachers-supervisors [11], proposed basic reference books, photographs and other creative material produced during these two projects

[15] http://new.focusing.gr/
[16] http://portal.opendiscoveryspace.eu/community/fysikes-epistimes-sto-gymnasio-science-gymnasium-70357
[17] http://physicsmarkopoulo.blogspot.gr/
[18] http://portal.opendiscoveryspace.eu/community/focusing-creativity-and-nvc-classroom-70356
[19] https://9d7ba044-a-62cb3a1a-s-sites.googlegroups.com/site/nikoskypriotakis/NVC_Schools_Timed.swf?attachauth=ANoY7cp2KxrOi6IIjPrcO5QNVIJO7sudCN8eFRBLgpaGkEDNYxenOykYtZDMEat8yXv_6Cn7a-vVSFdi6zLGjmY8a-ZXR5Yj4TH6vHDOYeqOht8WOa6rRQ6Ks1FD1fODSlzH-sJBniQv_R3OmHpT9ZDTjNxmqXKUhFeoG8CVVdOfd7qB5CxA47uHzUO73a1uSwHAEDLEtvCNfpSFgT1dAYmwMas4illqow6eARLnBYr_cboiR8GaOQg%3D&attredirects=3
[20] http://portal.opendiscoveryspace.eu/community/thinking-edge-tae-educational-applications-tae-sto-sholeio-70369

(e.g. posters, digital paintings, school newspaper, videos, etc.), and a very interesting activity which we tried many times, with great success and interest («four chairs of communication»: a. Hearing criticism and fighting back, b. Hearing criticism and blaming ourselves by introjecting the views and values of others, c. Self-empathy, hearing our feelings and needs and d. Empathy for the other, hearing their feelings and needs). This activity comes from NVC, and you can read more about it on http://physicsmarkopoulo.blogspot.gr/2014/05/blog-post_19.html, as a student describes it. Indicative titles/contents: «The four chairs», «Two voices» (e.g. those «talking» to the student-facilitator before he finally articulates his response to a difficult confrontational situation between two fellow students), «Mediation and feedback» and «Jorge Semprùn.»

'Thinking At the Edge', TAE is developed in 14 steps [5] [6], which are applied dynamically, and not necessarily sequentially, in three phases after a preparatory one. In the preparation phase we are getting ourselves experientially familiar with Felt Sense, the Focusing process (on our inner, living body) and the process of creating a free (and/or safe) inner space (Clearing A Space), through appropriate experiential activities, which are performed with closed or open eyes, individually, in groups or in pairs (e.g. activities where we create collages on «How I see myself?» or «How do others see me?», etc.). The preparation phase includes a process where we carefully make Focusing-Partners, in order to work together through the various steps of TAE, changing roles along the way.

After that, the first phase follows («Speaking from the felt sense»), which is usually adequate both for young learners and for adults. Children, who are interested, can go on with the second phase («Finding Patterns from Facets - Instances»), where we apply multiple logical methods in language processing and in critical/experiential/non-intellectual 'thinking' (e.g. crossing of chosen terms, deepening of our understanding of them (dipping), etc.). The third phase («Building theories») has even greater demands on processing time and may as well accompany us in our doctoral assignment, in our writing a book, in our qualitative research etc., and comes with new, very creative processes, such as processing of relations and inherent relationships between terms, interlocking them in mutual definitions, etc. This third phase may last for a very long time, even years.

Concluding TAE is not only my own «Island» (as in Aldous Huxley's philosophical novel "Island"), an "island" of true creative joy and excitement, full of fresh, new, vibrant personal meaning, but also one of those valuable methods, «... methods for training people to pass at will from conceptualized perception to direct virgin perception. The exercise keeps the mind fresh and sensitive and teaches a wholesome understanding of the function of language and its dangers, when taken too seriously, in the way that all pedants, doctrinaires and dogmatists invariably do, with such catastrophic results [1]. «

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8

# History Scenario for fostering competences "Ancient Greek Alliance - European Union: Differences and similarities"

**Elias Stouraitis**
National and Kapodistrian University of Athens, Greece

**Abstract:** Ancient Greek alliance remains always an indifferent event except of students who care about the significant moments in history. An inquiry-based scenario which combine past and present through alliances in Ancient Greece and European Union took part in a high school outside Athens. This research proposal aims to elucidate the ways in which sixteen years old students perceive their identity in space and time. Students discover why people and states insist on making alliances during the centuries in relation to their motivations using 'Chorochronos' software. This scenario gives students a chance to discover deeply their future political role in European Union and in the same time they understand the differences between European Union and the Ancient Greek Alliance. Hence, they avoid the anachronisms, they are capable to make analogies between the past and present and make decisions as citizens of European Union.

**Keywords:** *history, inquiry based scenario, alliance, competences*

## 1. Introduction

The paper reports the study which inspired by the financial and social crisis in Greece. People's reactions against European Union in comparison with common sense thinking provoked a confused thinking in students' mind. In addition to this, conjure up how difficult is for students to understand their role in the European Union as they have not exercise enough their mind how this Union works in their present life. Hence, it is more difficult to understand the past and people's decisions about alliances and how these change their lives. These different chronological references could be easily confusing in students' minds. Anachronisms remain a subject that always emerges in a history classroom and it should be separated by common sense thinking. Having this in mind, an inquiry-based scenario between ancient Greek alliance and European Union took part in a high school in city out of Athens. A classroom of sixteen years old students voluntary participated in this educational scenario and successfully completed this in six hours. This paper shares the procedure in which this educational scenario was constructed and implemented at this school.

## 2. Theoretical Background

Based on the principles of discovery learning, according to which students discover knowledge through inquiry procedures; a scenario combining Ancient Alliance and European Union was created. In 1961, Bruner (1961) pointed that the gradual discovery of internal structures, laws and principles governing an event or a phenomenon contributes to a deeper students' understanding [1]. A special role in this gradual discovery should be the teacher who constantly provides incentives to the students. Having teachers' support, students could more easily reach their target and especially the acquisition of the new knowledge.

Students use or discover documents, in which knowledge is not limited but becomes creative play, as it leads to the construction of meaning from the students. In the context of the history's subject, digital technology could be exploited so as to facilitate access to rich historical material, contributory to

a more effective, active and interactive learning process by developing students historical investigation skills and cultivating critical and historical thinking and historical consciousness [2]. The understanding of historical events, the persons' approach and connection of causes and effects and the development of historical consciousness relates to the understanding of people's behaviour in diverse situations [3].

Theorizing students' historical thought and consciousness, we should underline the distinction between social and historical thinking which is combined with their consciousness. Social representations' theory was first formed by Serge Moscovici who confess that different forms of thinking guided by people's relations in the society. The theory of social representations is underlain by the epistemology of common sense. Common sense could be characterized as the thinking of daily life that uses knowledge shared by social groups. Usually, common sense prioritizes human interactions and relations taking diverse forms. Due to social circumstances, common sense thinking forces humans to take up their own positions and defend those making judgments, evaluations, criticisms and proposals for action [4].

Nevertheless, historical thinking characterized by the ability of reasonable synthesis reveals students' critical thinking and the comprehension of change over the time. Human beings are able to identify continuity and change, use primary source evidence and analyse cause and consequences [5]. Historical thinking has no relation to social thinking and what society would like to be satisfied from hearing unquestionable naïve positions.

### 3. Aims of educational scenario

***Curriculum areas addressed:*** History and Civics

***Educational Objectives:***
In terms of knowledge, students should know the time, the places and the causes of how Athenian Alliance and European Union was created. In addition to the previous, students should realize the meaning of how I make a decision in their life and at the same time how the states make decisions about alliances. Afterwards, it would be examined if these alliances have any reaction in people's lives. Hence, students appreciate the role of these alliances and the consequences on the states in future.

In terms of skills, students foster historical thinking and consciousness through research of documents and criticism on them. Historical analogies between the present and the past avoiding anachronisms during the process of the script. Students understand the role of European Union and at the same time the place where they live comparing European Union with the Athenian Alliance. Discovering the causes that led to these two alliances and the results made on people's lives should help students understand their role in the world. Last but not least, the evaluation on the evidences which develop students' critical capacity. In terms of attitudes, students understand the importance and effectiveness of collaborative learning

According to the 8 Key Competences [6] the specific scenario aims at fostering the communication in the mother tongue and foreign languages, digital competence, social and civic competences and sense of initiative and entrepreneurship. At first, students should express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form about Athenian Alliance and European Union. In addition, students should find evidences in English or French language due to their discovery on how European Union created.

Secondly, in terms of digital technology, students should involve the confident and critical use of information society technology (IST) and thus basic skills in information and communication technology (ICT) via the software Chorochronos and e-portofolio Mahara. In the issue of "learning to learn", students perceive how to pursue and organise their own learning, either individually or in groups, in accordance with the historical methods. Fourthly, students participate in an effective and constructive way in social and working life through European Union. It is linked to personal and social well-being in terms of how students will understand their role in European Community. An understanding of codes of conduct and customs in the different environments in which individuals operate is essential.

Finally, students enhance the ability to plan and manage

projects in order to achieve objectives. In particular, students should separate in two groups due to discover the causes of the creation of two different Alliances. Students should make decisions, collaborate with each other and take initiatives about the historical interpretation. This should include awareness of ethical values and promote good governance.

***Special emphasis:***

This educational scenario emphasize on students' critical thinking and their initiative taking actions and decision making when it is provided. Students should also criticize the evidences and the way they will find them. Students should separate in teams in order to solve the main problem of their team and they should interpret the evidence which they found and create a historical text.

***Evaluation:***

This educational scenario should be evaluated in group as much as in individual. In group assessment, it should be underlined how students understand basic problem solving and how they cooperate with each other. In individual rating, teachers remark students' development of historical thinking and historic proportions.

**Procedure**

Teacher begins the lesson using a title of a Greek newspaper concerning how difficult is European's Union future due to nationalism in each country. Teacher asks students why this happens and which are their opinion about European Union. Students seem to be very confused about why these nationalisms take part in that time in Europe and others could not understand the meaning of European Union. Teacher asks if they know any other alliance in the past and how people in that time reacted in that alliance. In the first two hours, teacher divides into two groups the students and they open in their computers the software Chorochronos. The first group should find the map of the 5 B.C. time in order to discover the place where the Athenian alliance took part [fig. 1]. They have to discover the cities - states in ancient Greece where took place in that alliance. Teacher gives students short evidences about the Athenian alliance in order to find the cities-states on the map. Afterwards, this group should find online evidences with teacher's guidance about how this alliance modified.

*Figure 1. Students of the first group should find the places where the Athenian alliance was created*

The second group should find on Chorochronos' map the end of the Second World War and the teacher gives them short evidences about which countries in Europe decided to connect financially and why. Students have to mark these countries and understand why they decided to create these alliances. Afterwards, this group should find online resources with teacher's guidance about how this alliance modified. All these evidences should remain in a place where students should always recur finding their work.

Afterwards, in the next two hours, students in both groups evaluate the evidences in terms of who wrote them, in which thesis noted down these evidences and why. Students should collaborate in order to decide which evidence will use and they will have to mark the changes on the map. Students have to write down a historical text about the alliances which will present inside classroom.

In the finally two hours, students should present their texts on the plenary session of the classroom. This will give the chance to discuss after any text if there is any similarity between these two alliances. Teacher tries to elicit students' thesis about how they understand these alliances. Many students maybe be confused about the time, the historical persons and the historical events. Teacher tries to make students avoid anachronisms and distinguish the historical events during the time. Students have to complete a final questionnaire about the two alliances and their opinion about it.

**4. Discussion**

This inquiry-based scenario gives students a chance to discover the two difference alliances in two different historical periods. There are two points in which should pay attention. On one hand, digital technology is not manageable to all students. They feel more uncomfortable when they use it in a learning scenario than to their personal usage at home. This maybe happens due to the limited usage of digital technology in this school and it was a change of their previous lessons all these years. On the other hand, students could not avoid common sense thinking. Anachronisms were the main problem of their thinking but teachers should constructively work on their thinking. They will help students gives them guidelines on how they think critically and how they avoid anachronisms.

**5. Conclusion**

The inquiry about the causes which created the two alliances (in ancient Greece and EU) in different time frames and conditions develop students' critical thinking about how these communities made these decisions and their consequences. This helped students to understand how different were the two alliances and how important is to distinguish the motivation in every historical period so as to avoid common sense thinking. Hence, students could react more mature in modern society because they understand their role in their country and in general in European Union.

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9

# Competences developed in pre-service language teacher education in Greece

**Marianthi Karatsiori**
Ministry of Education and Religious Affairs, Greece
mkaratsiori@gmail.com

**Abstract:** This article attempts to assess the competences acquired during the pre-service language teacher education programme at the Aristotle University of Thessaloniki in Greece. The study focuses on trainee teachers of two different language departments: the school of English language and literature and the department of French language and culture. The article sheds light on ways that trainee-teachers of the English and French language department build their teaching competency, it provides a comparative view of the competences they value to develop and it records their expectations for improving the existing language teacher education programme.

**Keywords:** *initial-language teacher education, Greece, restructuring academic curricula, student teachers, educational policy guidance, teacher qualifications, best practices*

## 1. Introduction

The focus of this paper is on the competences that pre-service education and training (PRESETT) of language teachers in Greece aims to develop. Though PRESETT tends to be a neglected area within the wider field of language teaching, given that in terms of research conducted far more is written about in-service education and training (INSETT), PRESETT is clearly of importance. PRESETT is the training and education ones receives before starting to work as a teacher, while INSET is the training and education one receives during his/her career as a teacher. Pre-service teacher education programs play a significant role in the preparation of a highly qualified teaching workforce, which is necessary to support the increasingly knowledge-intensive societies. National governments and school education systems dedicate considerable financial and human resources to PRESETT. PRESETT faces many challenges. Firstly, expectations for teachers are very high in today's educational reform and policy agendas. Teachers must be prepared to effectively respond to the needs of a growing diverse population of trainees with a variety of multilinguistic, multicultural and multiability needs. They are also expected to manage the far-reaching changes that are taking place in and out of schools. The balance between what is required of teachers and what PRESETT offers to them has a significant impact on their teaching. In addition, PRESETT faces the danger that initial training can be seen as providing an approved, finished model of teaching. Furthermore, a newly qualified teacher moving into the teaching profession following a university course may well have been exposed to more theory than practice. Also, the pedagogy of the lecturers he/she attended may not have modelled flexible, trainee-centred approaches.

In the spirit of the challenges that PRESETT faces today, this study aims to present the competences that pre-service language teachers of two different language departments developed during their studies. The study focuses on trainee teachers of two different language departments: the school of English language and literature and the department of French language and culture of the Aristotle University of Thessaloniki in Greece. Having as a point of reference the

European Profile for Language Teacher Education- a Frame of reference (Profile) (European Commission 2004), trainee teachers evaluate the teacher education programme they were about to complete regarding the teaching competences they value to have developed during their four-year studies. Teacher competences are built on 'a concept of teaching as praxis in which theory, practice and the ability to reflect critically on one's own and others' practice illuminate each other, rather than on a concept of teaching as the acquisition of technical skills' (ETUCE, 2008). Teaching competences are thus complex combinations of knowledge, skills, understanding, values and attitudes, leading to effective action in situation. Since teaching is much more than a task, and involves values or assumptions concerning education, learning and society, the concept of teacher competences may resonate differently in different national contexts (European Commission 2013). It is also useful to distinguish between teaching competences and teacher competences (OECD 2009). Teaching competences are focused on the role of the teacher in the classroom, directly linked with the 'craft' of teaching – with professional knowledge and skills mobilised for action (Hagger & McIntyre 2006). Teacher competences imply a wider, systemic view of teacher professionalism, on multiple levels – the individual, the school, the local community, professional networks (European Commission 2013).

## 2. European Profile for Language Teacher Education- a Frame of Reference

The European Profile of Language Teacher Education – a Frame of reference (Kelly et al. 2004) proposes a toolkit for language teacher education in the 21st Century and "has been established as a non-mandatory frame of reference containing examples of good practice and innovation, as well as information about the issues language teacher education programmes encounter" (p. 9). The profile deals with the initial and in-service education of foreign language teachers in primary, secondary and adult learning contexts and it offers recommendations for language education policy makers and language teacher educators in Europe. It presents 40 key elements in language teacher education courses that "deal with the structure of educational courses, the knowledge and understanding central to foreign language teaching, the diversity of teaching and learning strategies and skills, and the kinds of values language teaching should encourage and promote" (p.4). It should be noted that all 40 key elements of the Profile are very important for teacher education and they all contribute to the development of teacher and teaching competences. Nevertheless, this article focuses only on those key elements that are more directly linked to teaching competences and teaching practice. The Profile does not include a distinct section for teaching practice. As the school-based teaching practice course is a relatively new concept at the English and French language departments at the Aristotle University of Thessaloniki and it was not a mandatory course for all trainee teachers at 2011, the present study takes some key elements of the Profile to examine whether school based teaching practice courses are well accepted by trainee teachers and develop teacher and teaching competencies by introducing trainee students to the reality of the teaching profession.

### Initial Language teacher education policy in Greece

Language teachers in Greece follow a four year Bachelor degree corresponding to 240 ECTS points in Universities and they specialize in one language. There are two Universities that offer initial language teacher education degree programs for prospective language teachers; the National and Kapodistrian University of Athens and the Aristotle University of Thessaloniki. Up to now, those wishing to work as language teachers follow a four-year bachelor degree program in the language chosen, which, is considered a per se teacher education degree program, being the only prerequisite in Greek teacher education system for qualifying language teachers, though it also offers other career paths. In 2011, where the study took place, the school-based teaching practice courses at the language departments in Greek universities did not constitute mandatory courses for all trainee teachers.

## 3. Method and participants

The basic principles of descriptive and inductive statistics were used for processing the findings. The software PASW Statistics 18 was used for the analysis of data. The research approach used was quantitative research. The conduction of the research was based on the arithmetic use of variables (quantification) through the use of a structured research tool (questionnaire). The sample, collected by random sampling,

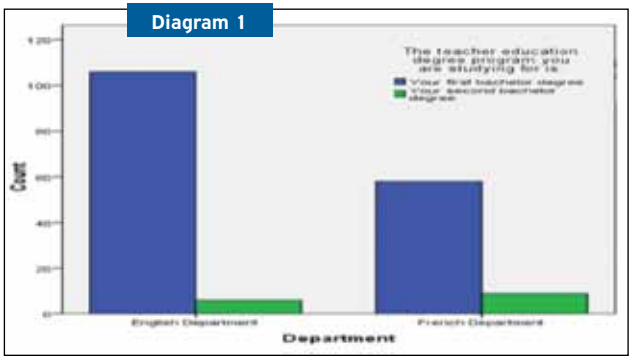
consisted of 112 trainees of the School of English language and literature department and 67 trainees of the French Language and Literature department of the Aristotle University of Thessaloniki. Trainee teachers received the questionnaires in their classes. The questionnaires were distributed to trainee teachers that were toward the end of the second semester of their fourth year of studies or to those that had gone beyond the fourth and final year of studies, without accumulating the necessary ECTS points allowing graduation. This was intended to allow for a retrospection evaluation of the fourth year, in addition to the previous three. The participants remained anonymous and were assured that the data would be used for research purposes only. Given the fact that teaching practice was not obligatory for all trainee teachers in the current curriculum and that only 16.2% of trainee teachers have participated in a school-based teaching practice course during their studies

**4. Results**

89.4% of the participants were women and 10.6% men. 67% were 20 to 22 years old, 18.4% 23 to 25 and 14.4% were above 26. The 63.3% were attending the eighth and final semester of their studies, while the 36.7% had exceeded the ninth semester of their studies.

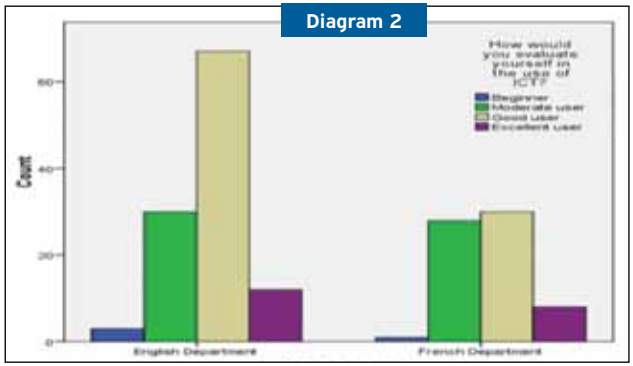
For the majority of trainees this is the first undergraduate qualification. Specifically, 94.6% of trainees at the English Department and 86.6% of trainees in the French Department study for obtaining their first undergraduate degree. Only 6 respondents of the English department (5.4%) and 9 of the French Department (13.4%) study for their second university bachelor degree.

Diagram 1



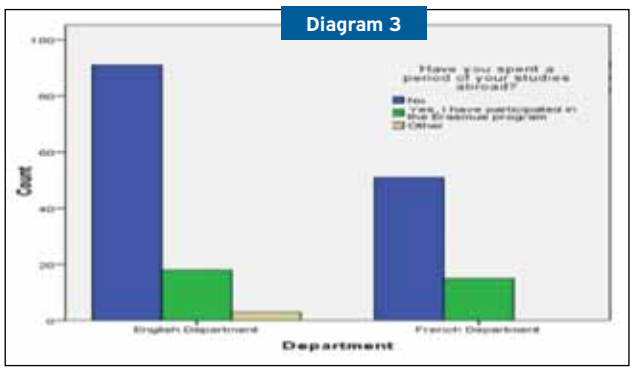

Regarding the effective use of Information and Communication Technology, from the total sample of 112 respondents of the English department, three evaluated themselves as beginners, 30 as moderate, 67 as good and 12 as excellent users of ICT. Respectively, out of 67 trainees of the French Department, one trainee evaluated himself/herself as beginner, 28 as moderate, 30 as very good and 8 trainees evaluated themselves as excellent users of ICT.

Diagram 2




In the English department, the vast majority, 91 persons (81.3%) stated that they have not spent a period of their studies abroad, 18 persons (16.1%) stated that they have participated in the Erasmus exchange program and three trainees spent a period of study abroad with another program. In the French department, 52 trainees (77.3%) answered that they have not spent a period of their studies abroad and 15 trainees (22.1%) answered that they have participated in the Erasmus exchange program.

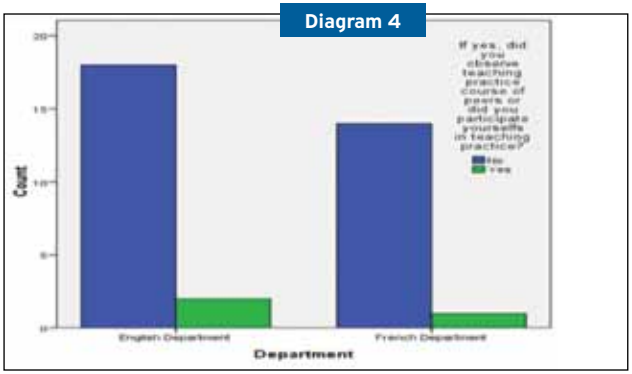
Diagram 3




Only 2 trainees (10%) of the English department and one from the French (6.7%) department had the opportunity to

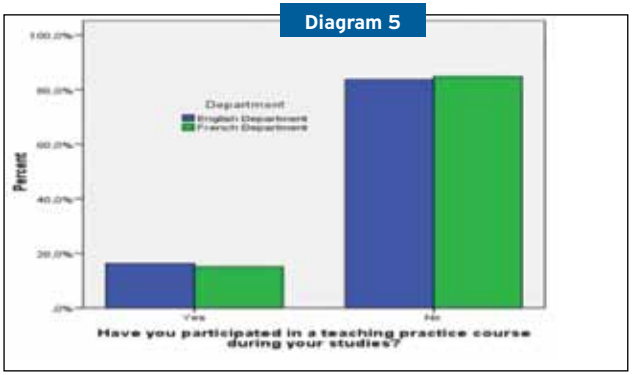
participate in a peer observation teaching practice course or in a school-based teaching practice course during their stay abroad.

**Diagram 4**




It is then observed that only 16.2% of the sample of the English department and 15.2% of the French Department has been involved in teaching practice during the period of their studies.

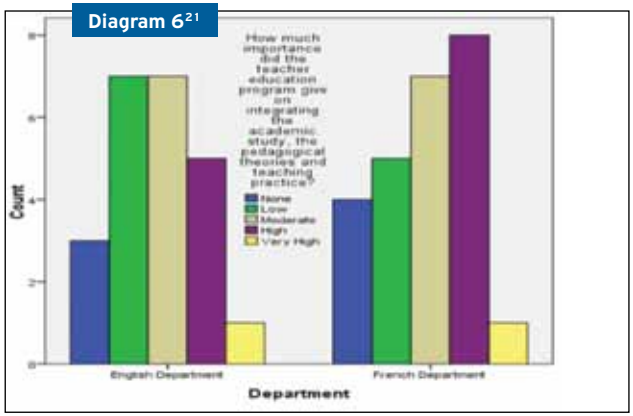
**Diagram 5**




As the teaching practice, was not a compulsory subject in either the English or the French teacher education program in 2011, these questions, which correspond from diagram 6 to diagram 12 were only filled in by trainees who had participated in teaching practice during their studies. Hence, from a total sample of 179 respondents, only 48 trainees answered the following 7 questions, 23 of the English department and 25 trainees from the French. The next 8 questions ask participants to assess the importance that the teacher education degree program gave to key elements that are linked with school-based teaching practice. A 5-point Likert scale was used, based on answers classified by type (1. No importance, 2. Low importance, 3. Moderate importance, 4. High importance, 5. Very high importance), trainees could thus express their positive or negative views.

Diagram 6 depicts the importance the teacher education degree programs gave on integrating the academic study, the pedagogical theories and teaching practice. 7 trainees of the English department replied that the importance was low, 7 that it was moderate, 5 that it was high and 3 trainees replied that no importance was given. One trainee characterized the importance as very high. Concerning the French department, 8 trainees replied that the importance was high, 7 that it was moderate, 5 that it was small, 4 trainees considered that there was no importance at all. Similarly with the English Department, only one trainee characterized the importance as very high.

**Diagram 6[21]**

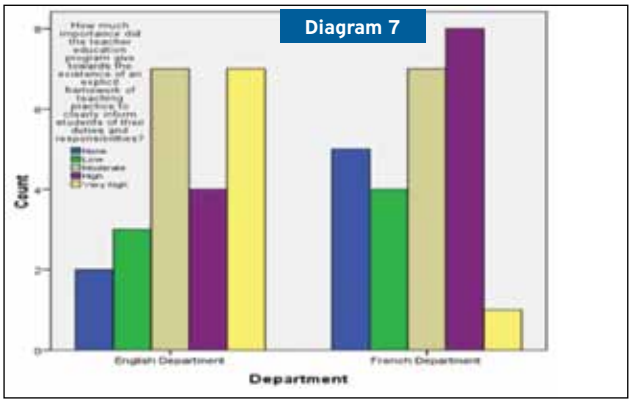



The next diagram[22] shows the importance given towards the existence of an explicit framework of teaching practice to clearly inform trainees of their duties and responsibilities during their teaching practice. 30.4% (7 trainees) of the English department and 4% (1 trainee) of the French Department characterized the importance given as high. The remaining percentages are as follows: For the English De-

[21] The question depicted in this diagram corresponds to Key element 1( structure) of the Profile
[22] The question depicted in this diagram corresponds to Key element 3( structure) of the Profile

partment, 4 trainees (17.4%) believe that the importance was high, 3 trainees (13%) that it was low and 2 trainees that there was (8.7%) no importance. For the French Department: 8 trainees (32%) believe that it was high, 7 moderate (28%), 4 (16%) low and 5 (20%) believe that there was no importance at all.

**Diagram 7**




The following chart[23] presents trainees' assessment regarding the importance given by the teacher education degree programs in working with a mentor and understanding the value of mentoring. The majority in both departments considers that high importance was given at a rate of 30.4% for the English Department and 32% for the French. It is observed that the responses between the two departments converge.

**Diagram 8**

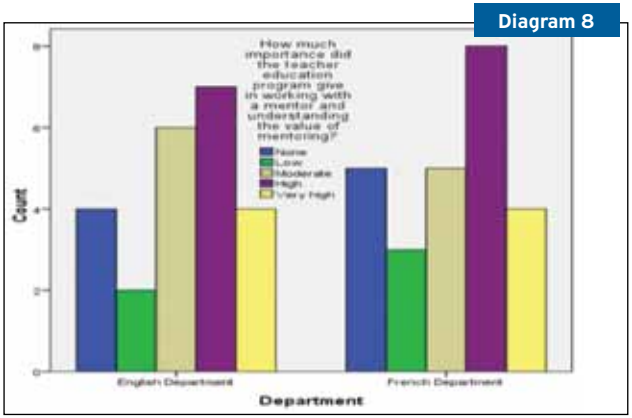



Diagram 9[24] refers to the importance given on the development of a friendly and professional relationship with the mentor, based on dialogue and mutual respect during teaching practice. The majority of trainees in both departments consider that moderate importance was given at a rate of 34.8% for the English Department and 28% for the French Department. 5 trainees (21.7%) in the English department and 5 (20%) in the French department replied that the importance was high.

**Diagram 9**

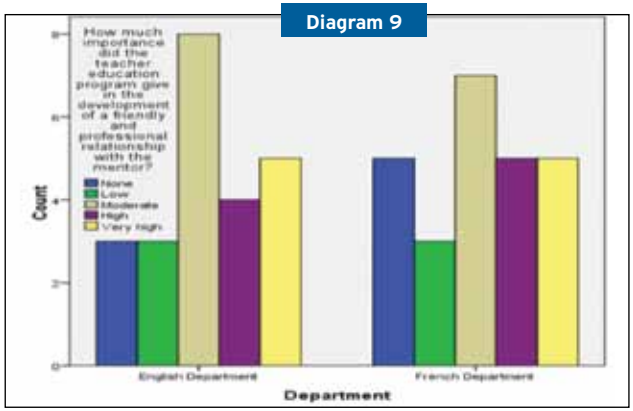



**Diagram 10**

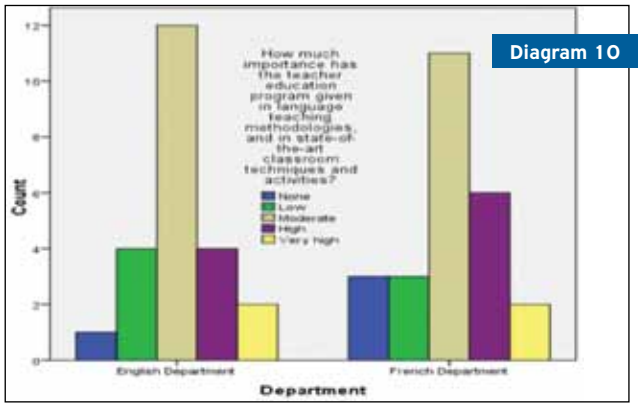



Diagram 10[25] refers to the importance given in the training in language teaching methodologies, and in state-of-the-art classroom techniques and activities. 52.2% of the English department and 44% of the French department said that

[23] The question depicted in this diagram corresponds to Key element 4( structure) of the Profile
[24] The question depicted in this diagram corresponds to Key element 4( structure) of the Profile
[25] The question depicted in this diagram corresponds to Key element 14( knowledge and understanding) of the Profile

moderate importance was given. All other responses between the two departments converge, as seen in the diagram below.

10 trainees from the English (43.5%) and 10 (40%) of the French department agreed that moderate importance was given on training in ways of adapting teaching approaches to the educational context and individual needs of learners. One trainee of the English Department (4.3%) and 5 (16.3%) of the French Department believe that no importance was given at all.

**Diagram 11**[26]

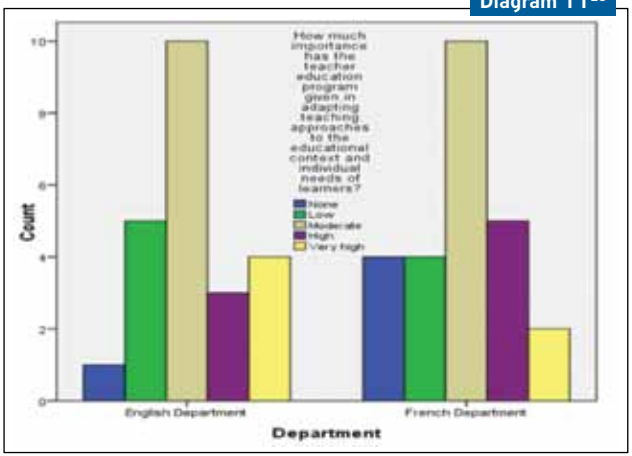
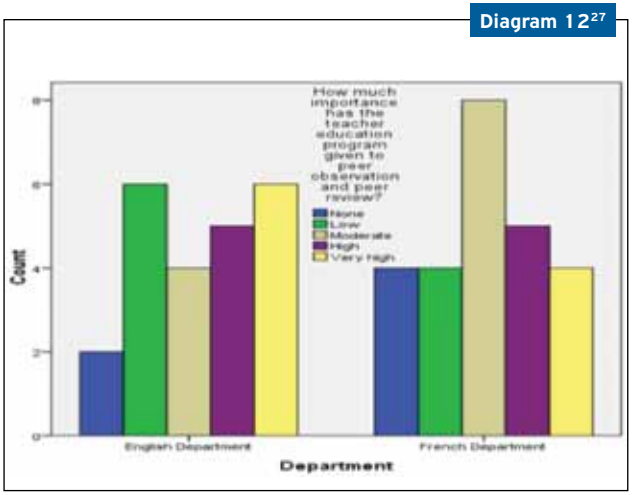


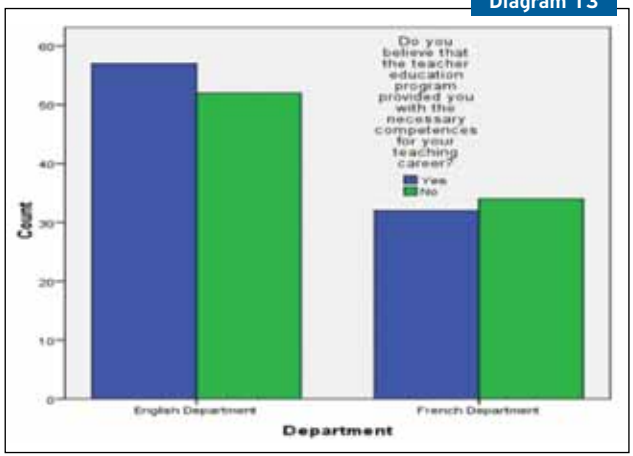

**Diagram 12**[27]




When asked about the importance given to peer observation and peer review, equivalence is observed in the English department, with 26.1% of trainees to assess that low and high importance was given. 17.4% (4 trainees) said that moderate importance was given. Concerning the French department, 8 trainees stated that moderate importance was given, 4 (16%) trainees believe that the importance was very high, 4 that it was low and 4 estimated that there was no importance given in peer observation and review.

Diagram 13 presents trainee teachers' opinion on whether their pre-service education and training in English and French Department of the Aristotle University of Thessaloniki provided them with the necessary competences for their teaching career. The majority of the English Department (52.3%: 57 trainee teachers) and the minority of the French Department (48.5%: 32 trainee teachers) believe that their pre-service education and training has provided them with the necessary competences to work as teachers. The majority of the French Department corresponding to 34 individuals (51.5%) believes that they have not developed the required competences for working in the education sector.

**Diagram 13**

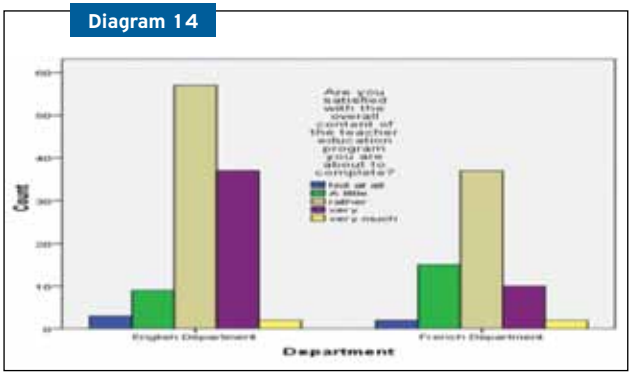



When asked about whether trainee teachers were satisfied with the content of the academic curriculum, the majority of trainee teachers (52.8%) in the English department said

[26] The question depicted in this diagram corresponds to Key element 22 ( strategies and skills) of the Profile
[27] The question depicted in this diagram corresponds to Key element 29( strategies and skills) of the Profile

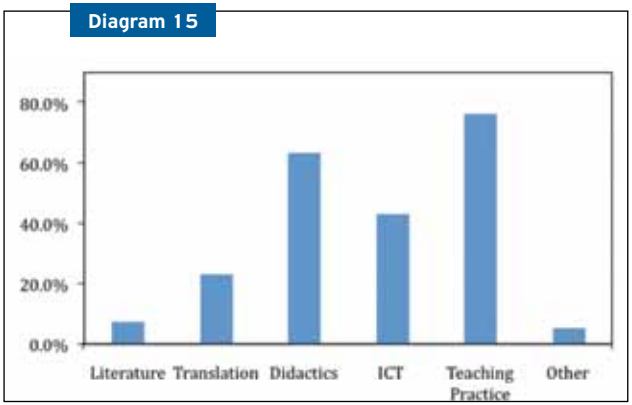
they are rather satisfied and 34.3% said they are very satisfied. 56.1% respondents of the French department said that they are rather satisfied and 22.7% said they were a little satisfied.

**Diagram 14**



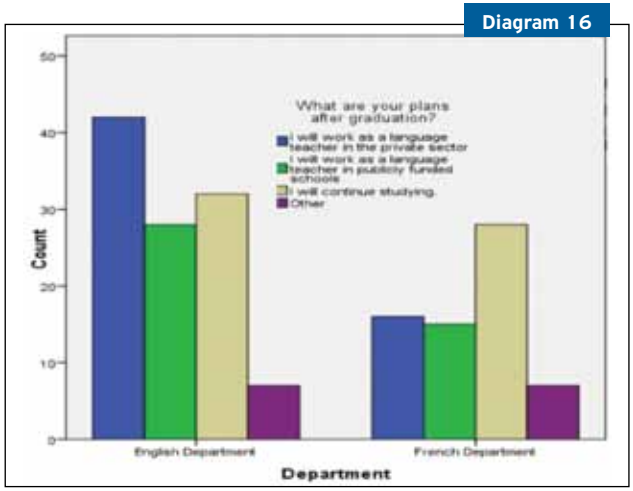

The next diagram depicts the additional courses that trainee trainees of the two departments consider that would improve the existing curriculum. Trainee teachers could mark more than one option. 76.3% (135 people) believe that additional teaching practice courses will improve the curriculum. The 63.3% (112 persons) and 42.9% (76 people) estimates that more pedagogical courses and ICT courses for pedagogical use would contribute to the development of teaching competences. Then, 23.2% (41 people) expressed their wish for more translation courses, 7.3% (13 people) for more literature courses.

**Diagram 15**



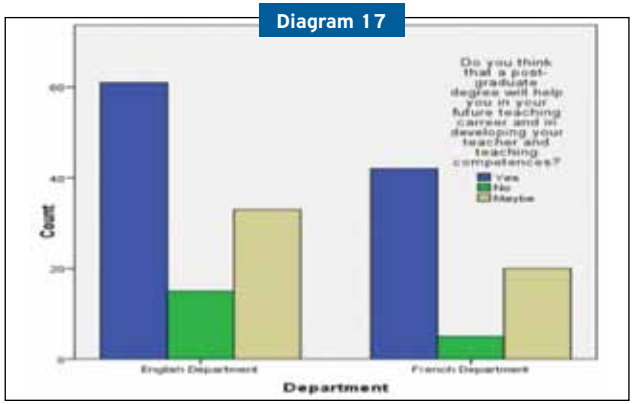

Trainee teachers were asked about their plans after graduation. The majority of respondents of the English department (38.5%) said they wish to work in private sector as teachers of English, 29.4% said they would like to continue studying and 25.7% said they would like to work as teachers in publicly funded schools. Regarding the French department, the majority of trainee teachers (42.4%) said they wish to continue studying, 24.2% said they would like to work in the private sector as language teachers and 22.7% wish to work as teachers in publicly funded schools.

**Diagram 16**



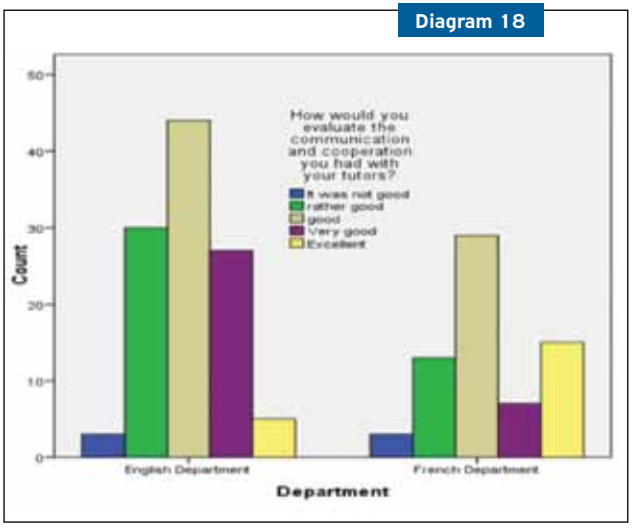

When asked if they believe that a post-graduate degree will contribute positively to the development of their teaching and teacher competences, the majority of respondents 56% of the English section and 62.7% (42 persons) of the French department estimates that a post-graduate degree would help them in further developing their teaching and teacher competences.

**Diagram 17**



The next question invites trainee teachers to assess the communication they had with their teachers. The majority of trainee teachers of the English department (40.4%) and of the French (43.3%) assessed their communication with teachers as good. 22.4% of the French department said that the communication was excellent, while only 4.6% of trainee trainees gave the same answer in the English department.

**Diagram 18**




The next diagram depicts the frequency of attendance in the university lectures. The majority of trainee teachers of the English department (34.9%) characterize the frequency of attendance as regular while 33.9% answered that they attend courses very often. The majority of trainee teachers of the French department (43.3%) consider that they attend university lectures very often. 20 trainee teachers of the English department (18.3%) and 15 of the French (20.4%) stated that they always attend the university lectures. Finally, 13% trainee teachers of the English department and 3% of the French department claimed that they never attend university courses and lectures.

Trainee teachers were asked whether there are courses which they never attend. The majority of respondents of the English department (58.2%) responded that there are no courses that they do not attend, while the majority of respondents of the French Department (55.2%) answered that there are courses that they do not attend.

**Diagram 19**

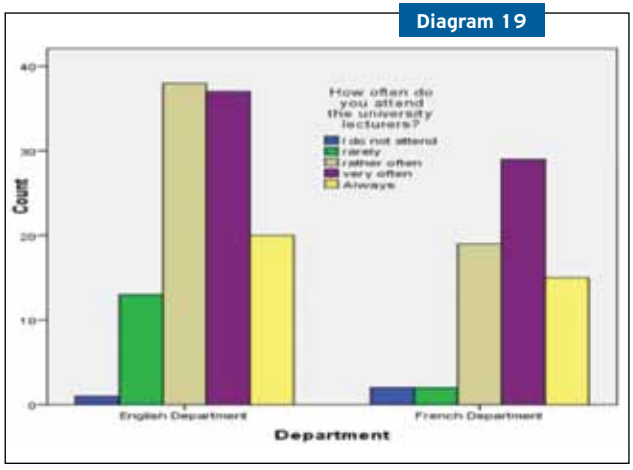
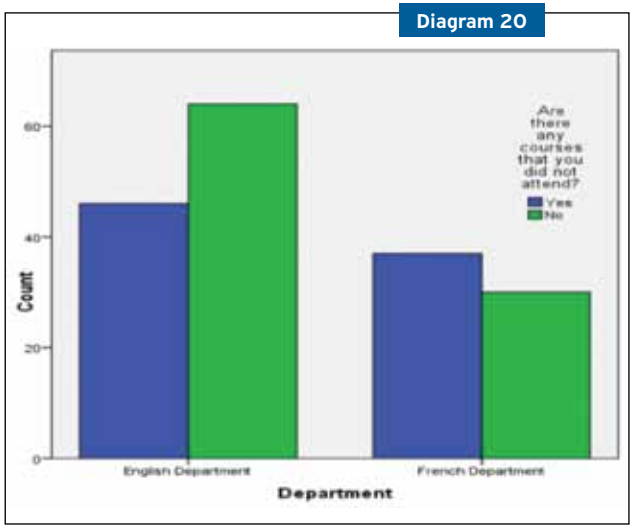



**Diagram 20**




Then, trainee teachers were asked to justify the reasons for not attending the courses. 39.2% did not attend courses because of the tutor, 29.2% because some courses coincide in hours with another course, 15.8% because of the content of the course, and 13.3% due to personal reasons.

Afterwards, respondents were asked to state in which sector they wish to work. There is convergence of views between the two departments. The majority wishes to work as teachers (69.5%: English department, 56.7%, French department), the second choice of respondents is to work as translators (18.1%: English department, 23.9 %: French department)

and the third as researchers / academics (9.5%: English department, 7.5%: French department).

Diagram 21

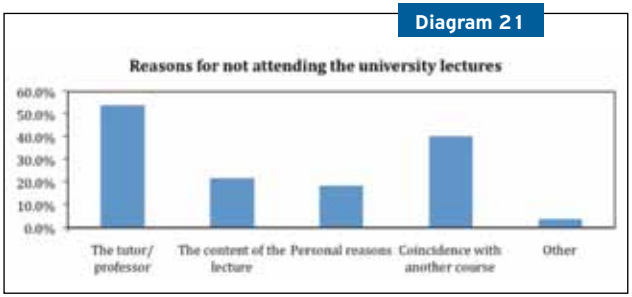
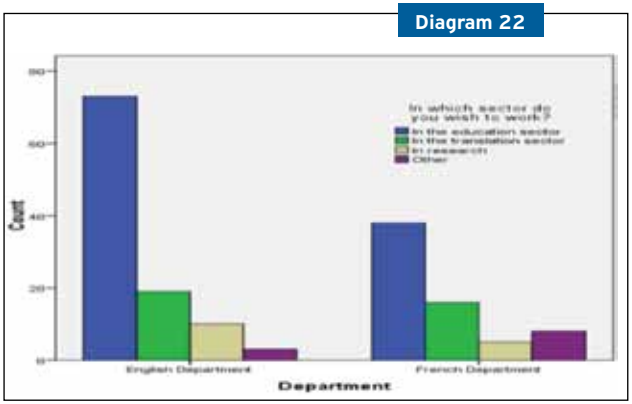



Diagram 22




## 5. Discussion

The vast majority of respondents wish to work in the educational sector and consider that a postgraduate qualification will help them in best preparing themselves for the teaching profession, letting us assume that the respondents do not feel that the initial language teacher education program they attended (and which, at the present time, is the only qualification needed in Greece for teaching in the private sector[28]) provided them with the necessary teaching and teacher competences to work as language teachers. In particular, respondents indicated the need to improve the current curriculum by integrating more courses in school-based teaching practice and didactics, while it is noted that only a minority of the sample participated in a school-based teaching practice course during their studies. Thus, it could be stated that one weak point in the Greek initial language teacher education system is the lack of combining the methodology of teaching with actual teaching practice. Hence, not only for fulfilling the trainee teachers proposals for improving the curriculum, but also for meeting the standards of initial teacher education in other European countries, the attendance of a school–based teaching practice course from all trainee teachers seems imperative. Teaching practice should be an integral part of teacher education. An introduction to the realities of the situation is an essential part of effective professional training. The aims of the teaching practice experience are to provide opportunities for trainee teachers to integrate theory and practice and work collaboratively with and learn from the teachers. Via teaching practice trainee teachers gain experience in managing and evaluating class work; in maintaining discipline and good order in the classroom; finding their own teaching style and personality and become acquainted with school organization and administration. In addition, recent research (Karatsiori: 2013) has shown that initial language teacher training in Greece requires the fewest study years when compared to other European countries. Also, it would be advisable that more trainee language teachers spend a period of studies abroad.

Demands on the teaching profession are evolving rapidly. Academic curricula and teachers educators should respond to these demands and readjust their content and methods regularly. The acquisition and development of teaching and teacher competences in no way can it be limited to pre-service education and training. It is a lifelong process. Ministers of Education have recognised that:

No course of initial teacher education, however excellent, can equip teachers with all the competences they will require during their careers. To be fully effective in teaching, and capable of adjusting to the evolving needs of learners in a world of rapid social, cultural, economic and technological change, teachers themselves need to reflect on their own learning requirements in the context of their particular school environment, and to take greater responsibility for their own lifelong learning as a means of updating and developing their own knowledge and skills. (European Union, 2009)

[28] For teaching in publicly funded schools, success in the ASEP national exam is also needed.

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10

# Education21: Building Teacher Capacities in Competence Oriented Education in The Netherlands

**Wouter Vollenbroek[1], Nico van Loo[2] & Sjoerd de Vries[2]**

[1] University of Twente, Media, Comunication and Organization, The Netherlands
w.vollenbroek@utwente.nl

[2] NHL University of Applied Sciences, Institute Education and Communication, Leeuwarden
E.N.van.Loo@nhl.nl, Sjoerd.deVries@nhl.nl

**Abstract:** This paper describes Education21 (Onderwijs21), the Learning Education initiative in the Northern region of the Netherlands. The goal of the project 'Education21' is to develop in a co-creation context the education of the 21st century. We did choose the 'Professional Learning Network' approach. This network consists of primary schools, secondary schools, teacher education institutes and education professionals. The main goal of the network is to contribute to the implementation of the 21st century skills in the Netherlands. Education21 is based on the EU projects: Open Discovery Space and TRANSIt.

**Keywords:** *learning organisation, educational improvements, Learning Education, Education21*

## 1. Introduction

Traditional teachers have control in the classroom; know what a student should learn in school and evaluate, support and assess learning processes. In the continuous improvement philosophy this traditional top-down thinking is emphatically released. In a school culture where continuous improvement is applied, all stakeholders have ownership in the development of the school and the development of himself: governance, management, teachers, and even students. Schools are – according to (Marino, 2011) – not only responsible for increased student learning, but also for developing social, emotional, and behavioural skills as well as the 21st century learning skills and the transversal competencies. More and more educational institutions in the Netherlands embrace this philosophy of continuous improvement. We describe our approach of continuously improving the Dutch education as "Learning Education" and define it as: "The learning landscape that facilitates the learning of all its members within open educational networks and continuously transforms itself in order to meet its strategic goals by using the latest online developments" (Vollenbroek, Jagers-

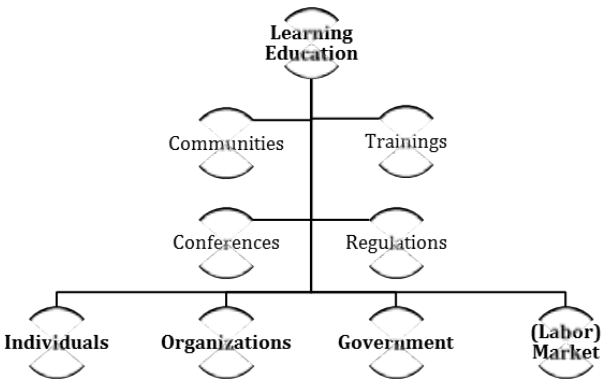


*Figure 1: Learning Education*

berg, Vries, & Constantinides, 2014). Figure 1 shows that the development of learning education is stimulated by at least four 'methods of learning'. These methods are: training, regulations, conferences and learning communities. In this paper we describe Education21[1] to build teacher capacities in Dutch competence oriented education and to stimulate the continuous improvement of education by following a networked-approach.

**2. The value of Education21 for Dutch education**

Involving and integrating educational stakeholders (individuals, organizations, government, and labor market) in the continuous improvement of education, largely depends on the added value that can be offered (Zhao & Kuh, 2004). The individuals (students, teachers and parents) will not participate if they are not intrinsically or extrinsically motivated to do this. The increasing knowledge needed to practise as a professional, and the accelerating rate of change within the discipline suggest that traditional learning models may not address the requirements of learners (Armarego & Clarke, 2005). The four methods of learning within Education21 are needed to meet the everchanging educational structure and content. We suppose that these methods improve the educational structure and quality, by using a problem-based design approach. In this paragraph, we will give an account of the value of Education21 and their characteristics.

Education21 is a learning network with the aim of developing 'learning education', focused on creating an environment of continuous development and improvement of education. The Education21-website is a knowledge platform where schools can present their own research and exchange their knowledge with others. In Learning Education we identified four categories that affect the outcomes of learning education: (professional) learning communities, trainings, conferences and regulations, these four categories are all implemented in the strategy of Education21. A knowledge agenda with all relevant events related to educational improvement has been constructed, teachers are able to participate in the events relevant for their developments.

1. Education21 developed (professional) learning communities were students, teachers and other professionals jointly work on the development and improvement of current practices.
2. Periodically conferences and symposiums were organized in order to have a physical meeting with some of the participant in the learning community and finally the regulations.
3. Workshops and other training methods are periodically scheduled. Individuals in education can apply for the courses that best fit their needs.
4. The regulations determine the direction that leads the way of Education21.

The educational stakeholders within Education21 (learn to) improve their and other's social, emotional, and behavioural skills as well as the 21st century skills and the transversal competencies. Integrating these competencies in the Education21-methods stimulates the development of each stakeholder and thereby ensures that education is continuously developing, so that it fits with the requirements requested in the 21st century.

**3. Dutch state-of-the-art regarding competence oriented education**

Transversal competences, 21st century skills and other social, emotional, and behavioral skills are not standardized in current education programs. One of the main reasons for this is that the Netherlands lacks a national policy on the training of teachers in giving competence-based education. However, Dutch educational institutions increasingly choose to start their own competence based training program, with a specific emphasize on the individual progress regarding the stated learning objectives on national level. To become skilled in giving competence-based education, teachers in secondary vocational education should have knowledge of their profession and the professional field, but also need specific pedagogical and didactic skills. Teachers in intermediate vocational education should have mainly developed the vocational and professional skills. They must also be better prepared to a function in competence-based education and working with qualification files.

The current training methods work insufficient. Nowadays,

[1] This paper is strongly connected to the article 'Co-Create the Knowledge Media of the Future' (De Vries & Vollenbroek, 2013).

teachers get training to deal with a variety of courses, learning paths and levels that are not sufficient for all educational levels. This requires special pedagogical and didactic skills and social and communication skills that teachers do not always get along in their training. Beside that there are too few teachers prepared for the competence-based education and working with the qualification files.

To become a competent teacher in the Netherlands, teacher should meet the following requirements: interpersonal competences, pedagogical competences, professional and educational competences, organizational competences, competences in working with colleagues, competences in working within the school environment and competences in reflection and development.

Current Dutch education is increasingly focused on the individual development of 21st century skills (Voogt & Roblin, 2010). The Dutch learning objectives in primary and secondary schools are strongly connected to the 21st century skills, these skills form the method or approach to reach the learning objectives. The Board of Education (2011) confirmed that the need for 21st century skills is no longer limited to senior positions. All students – also the less educated ones, who do not have such skills – will have problems in the labor market when these skills are lacking (Wagner, 2008). It is therefore, according to the Board of Education (2011) and the European Union (2006) necessary to devote attention to all types of education.

**4. Acquiring Transversal Competences in Education21**

Education21 is in essence developed to give educational stakeholders the opportunity to make in a collaboratively and research-based manner the improvements to their own education and that of the educational institution. The transversal key competences from TRANSIt are strongly embedded in the research-based activities in the Education21-environment. The educational stakeholders (in this case teachers and students) should show their 'learning to learn' and 'basic competences in science and technology' to show that they can indicate certain situations and developments. This can be described with two activities conducted in Education21:

1. The first case conducted in Education21 is 'Skiednisklip'. Within this project, students have carried out a joint study on various topics from the Frisian history (province in The Netherlands). Skiednisklip is a motivational and challenging method in which children in primary education actively work with and in their own regional history. The children map their environment and (cultural) history by actively researching and learning. In addition, they are invites to use (at least assive) the Frysian language. This makes parents and children more aware of the history of their own environment and their Frisian identity. Parents and their children jointly search for historical material in the vicinity (stories, archaeological finds, pictures, manuscripts and documents). The images were digitally recorded in the form of short video clips and blogs, which are published on the Skiednisklip website. During this project students learned some of the eight key competences for lifelong learning, for example: communication in the mother tongue, basic competences in science and technology, digital competences, learning to learn, social and civic competences, cultural awareness and expression and sense of initiative (and entrepreneurship).

2. A second case that describes the training of teachers in acquiring the skills to give competence oriented education, is the practical research of teaching students to ICT applications on the spot. In this training teacher were trained to do practical research – including design research – to improve their own courses. Practical research is in this context the systematic and objective manner of analysing own teaching practice gathered to learn and practice to improve them. The teacher is able to improve his act on the basis of research in the context of the school. Set against learning by reflection, features practice research by embedding in the theory, systematic data collection and sharing of acquired knowledge with colleagues, the profession and other stakeholders. During this project, teachers learned to acquire the following transversal competencies for lifelong learning: communication in the mother tongue, basic competences in science and technology, digital competences and social and civic competences.

The trainings, conferences and (professional) learning communities supports teachers in building their teacher capacities in integrating a more competence-oriented approach in education, the national policy regarding the achievement of learning objectives in The Netherlands determines the further direction of these developments. During the trainings, teachers learn to improve their capacities for giving competence-oriented education. One of the Education21-conferences held in The Netherlands was mainly focused on some of the key competences for lifelong learning, such as digital competences (using a 3D-printer), social and civic competences (starting professional learning communities), communicaton in the mother tongue and in foreign languages (multilingualism), and sense of inititative and entrepreneurship (shared leadership). With the Education21-initiative, we assume that bringing together different knowledge carriers will result in continuous improvement of Dutch education.

**5. Summary**

In Education21 we support educational stakeholders to become responsible for their own learning, we stimulate the individual development of students, teachers and other professionals. This has largely been conducted with four types of activities: trainings, professional learning communities, conferences/symposiums and regulations. During these individual and group sessions, the participants learn to acquire and teach competence oriented education; with competence oriented approaches.

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